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A NOVELTY IN DECORATION

THE ARCHITECTURAL RECORD

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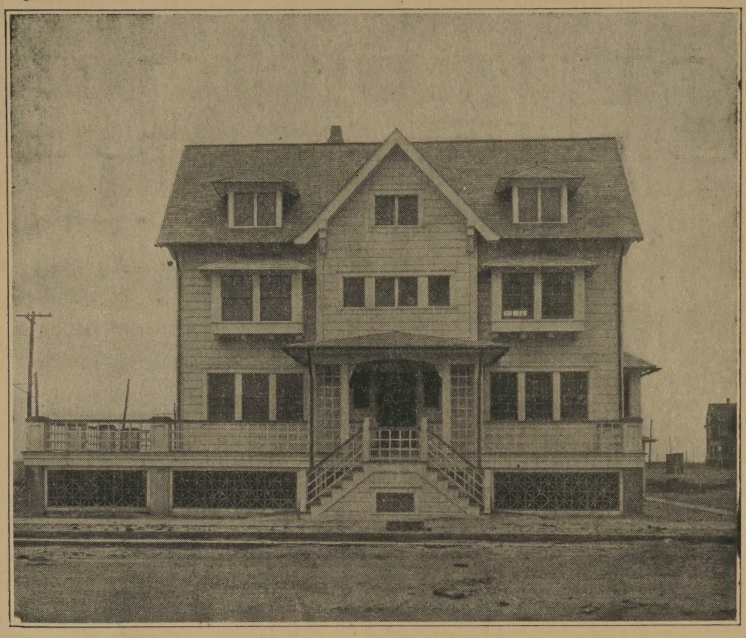
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A MONTHLY MAGAZINE OF ARCHITECTURE
AND THE ALLIED ARTS AND CRAFTS

VOLUME XXI

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The Knickerbocker Hotel

A Novelty in Decoration

One of the most puzzling problems which confronts the designer of a contemporary hotel is that of giving it some character which will strongly distinguish it in the eyes of its patrons. The best asset which a popular hotel can have is, of course, the ability to provoke interest and conversation, and while the designer cannot do as much in this respect for a hotel as its proprietor can, he can do a good deal. He can give the patrons of the hotel the sense that their surroundings are novel and amusing, with the result that they both have a better time while in the hotel and talk more about it after their departure; and as a matter of fact every new hotel which is opened up, particularly in New York City, is supplied with certain features which are intended either to amuse and divert its guests or else to give it a positive distinction in their minds. Thus in the Hotel St. Regis the attempt was to give the patrons of the hotel architectural surroundings as handsome and as expensive as those which are to be found in the very best contemporary American residences, and so to make it appeal to people who desired or were accustomed to live in that sort of a house. The Hotel Astor, on the other hand, was designed, above all, to be a popular hotel, and the whole object of its interior decoration was to give its guests as much variety as possible. The hotel contained every conceivable kind of a room—Japanese, Dutch, French, Pompeian, Indian, English, Art Nouveau, and so on to the end of the list. But, apparently, the biggest success was the palm room, which was supposed with the dim light of an artificial moon, electric garlands, the sound of running water to create the atmosphere of some sort of a garden. It was all very cheap, but it certainly proved to be effective. The Hotel Astor has been most popular, and its appearance has had much to do with its popularity.

Obviously, however, an architect has not very many means at his disposal of giving a hotel this desirable distinction. He cannot afford to design a St. Regis, and there would be no object merely in copying the Hotel Astor. He always has the alternative of making his hotel interesting merely by means of a simple, appropriate and consistent architectural treatment of the different rooms; but while that should, of course, be his fundamental purpose, architectural propriety alone is not enough. The guests of a hotel are not people of severe enough taste to be entirely satisfied with surroundings that are simply beautiful. They want to be diverted also, and the question is, how such diversion can be contrived without falling into architectural vulgarity and childishness? This question has been decisively and satisfactorily answered in the Knickerbocker

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DECORATIVE PANEL: "OLD KING COLE," BY MAXFIELD PARRISH. (Photo by A. Patzig.)
In the bar-room of the Knickerbocker Hotel.
Broadway and 42d Street, New York.

Hotel. That hotel has proved to be a huge popular success. Its restaurant and its bar have been thronged since the day it was opened, and while the popularity is due largely to the management of the hotel and its location, much of the attention which the hotel has attracted can be traced to the novel and amusing way in which it is decorated. Certain paintings which have been placed upon the wall have proved to be the best single advertisement which the hotel has received. They have attracted to the building, not merely critics and artists, who are specially interested in mural painting, but all sorts and conditions of people, who drink at the bar and feed at the restaurant. The decorations have constituted, that is, a genuine popular success. They have increased business, and we know of only one other similar instance in this country.

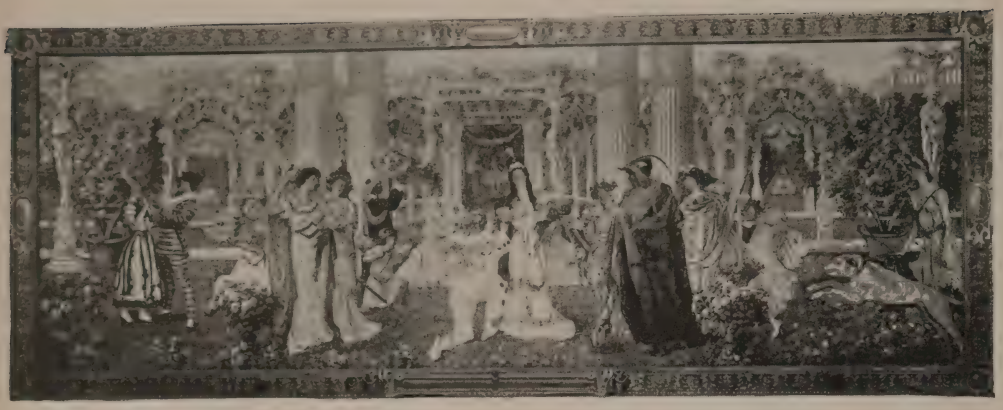
Other hotels have, of course, been embellished with mural paintings—some of them of high technical merit. The lobby of the Manhattan, for instance, has historical paintings on the wall. A diner in the palm room of the St. Regis may possibly be diverted by a series of lunettes, which depict adventures and sufferings of Psyche. Over the bar at the Imperial is a gorgeous Abbey, which is the best thing of its kind in New York. But it may be doubted whether these paintings have helped in the least to attract people to the hotels or to amuse them while there. At the best they have served merely to complete an architectural effect desired by the architect, and while such a service is sufficient in certain other buildings, it is not sufficient in a hotel. For a hotel is a building in which people live, and the decorations of a hotel should help people to live temporarily in a more amusing way. Indeed, the patrons of a hotel have as much right to demand amusement as the patrons of a theater, and everything about the building should be designed to keep them diverted and gay. But apparently such an idea has never passed the portals of the mural painter's mind. He is so accustomed to considering mural painting as a careful and correct technical treatment of some more



THE BAR ROOM OF THE KNICKERBOCKER HOTEL, SHOWING THE PANEL, "OLD KING COLE."

Broadway and 12d Street, New York. (Photo by A. Patzig.)

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects.



GARDEN SCENE, BY JAMES WALL FINN, IN THE "FLOWER ROOM" OF THE KNICKERBOCKER HOTEL.

Broadway and 42d Street, New York. (Photo by A. Patzig.)

or less uncongenial subject that the idea of untying the strings of his fancy and painting something really amusing never occurs to him. Such a notion might well appear to him as a base compromise with vulgar popular standards. It is not his business to be gay; it is his business to be good—to keep his painting on the wall, to fill his allotted space with figures of an appropriate size grouped in an effective manner, to harmonize the tone of his picture with that of its immediate surroundings, and so on. But a mural painting of this kind never pays its way. It may do so in a public building, in which people are not supposed to want anything amusing, but a picture on the wall of a hotel should appeal to the mood of the people who use the building, and it should help the building to serve its practical economic purpose. The owner of a bar who invites the attention of his patrons to highly artistic representations of Greek nymphs in the act of bathing at least has the right idea; but, perhaps, after the example of the Knickerbocker, that idea may hereafter obtain a better expression.

A year or two ago the owner of a small restaurant in San Francisco, which was a favorite eating place of some of the local artists, filled his patrons with consternation by announcing that he proposed to redecorate his dining-room. They knew what that meant; what to do? After taking counsel of one another they induced the proprietor to allow them, viz., the artists, to plan and execute the scheme of decoration. Thereupon about ten of them, each according to his fancy, filled his section of the wall with some sort of a pictorial joke. The ornamental outcome was not unlike the comic illustrated supplement of a daily newspaper, only very much better; and the perpetrators of this novel scheme of mural decoration congratulate themselves on having converted a threat of gloom into a source of joy. So they had, but unfortunately the joy was chiefly for others. The comic supplement on the wall so increased the popularity of the restaurant that the band of mural decorators were to a large extent crowded out by swallow-tailed parties. Perhaps it was as well, because he who would eat his meat with his own dead jokes staring him in the face must have a strong stomach, but the moral is obvious. Some at least of our mural decorations ought to be more like the comic supplements of a daily newspaper.

If the two most important decorations in the Knickerbocker Hotel do not remind one of a comic supplement, they are, it may be fairly affirmed, even more amusing. One of them, occupying a long narrow space under the ceiling and above the woodwork back of the bar, represents Old King Cole, and was painted by Mr. Maxfield Parrish. Old King Cole is seated enthroned in the



UNITED STATES CAVALRY CHARGE, BY FREDERIC REMINGTON.
Panel over the bar in the basement of the Knickerbocker Hotel.
Broadway and 42d Street, New York. (Photo by A. Patzig.)

center of the picture, with his pages at his feet, and a jester for each ear. These jesters know a humorous thing or two, and King Cole himself, while a merry soul, evidently does not laugh at everything. On the left are the fiddlers three, and on the right attendants bearing the pipe and the bowl. The spirit of good humor, that of the pipe and bowl, could not be more appropriately portrayed, and the selection of Mr. Maxfield Parrish for the job was the happiest of ideas. Mr. Parrish has hitherto been known almost exclusively as an illustrator; and the idea of giving him a decoration to paint would scarcely have entered the head of the average architect. Yet anybody thoroughly familiar with his work and thoroughly alive to the requirements of good decoration, would have realized that he was precisely the man for the job. The peculiar merits of his illustrations and his very training as an illustrator both qualified him to paint decorations, and particularly to paint a decoration on such a subject as Old King Cole. His work in the magazines has always exhibited high decorative qualities. It has always testified to his ability to compose ornamental patterns, groups of figures and simple strong masses of color, which are intrinsically beautiful and effective. Many of his illustrations have not needed the help of any subject matter, the representation of any incident or natural object, the expression of any feeling or mood to make lovely and exhilarating pictures, and in a country in which the art of decoration was a popular living art, Mr. Parrish would have been seized upon long ago and converted from an illustrator into a decorative mural painter. But, of course, he could not have reached his present standing as an illustrator unless his powers of expression and representation were as emphatic as his purely decorative gift. This gift naturally expresses itself in humorous fanciful and imaginative forms—in forms which he has made absolutely his own, and in which his sense of beauty finds easy and adequate embodiment. A subject, consequently, such as Old King Cole, which lends itself to a treatment at once humorous, imaginative and decorative, was just the matter for his first essay in mural painting, and the instant appeal which it has made to the spirit of merriment and conviviality is a sufficient proof that a decoration may possess propriety and beauty without being meaningless to nine people out of ten. As a matter of fact, the "Old King Cole" is not only beautiful and popular, but it is architecturally very effective. The size and distribution of its figures and the intensity and the arrangement of its colors are all admirably adapted to its situation, on the wall and its immediate architectural surroundings. It is one of the very few American mural paintings whose creator has not been afraid to make a vivid picture which has an intrinsic value, which appeals to popular human feeling, and which none the less



BAS-RELIEF. APHRODITE, BY JOHN FLANAGAN.
In the "Flower Room" of the Knickerbocker Hotel.
Broadway and 42d Street, New York. (Photo by A. Patzig.)



THE GRILL ROOM IN THE KNICKERBOCKER HOTEL.

(Photo by A. Patzig.)

Broadway and 42d Street, New York.

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects



A CORNER OF THE GRILL ROOM IN THE KNICKERBOCKER HOTEL, SHOWING A COPY OF REMBRANDT, BY HENRY B. FULLER.

Broadway and 42d Street, New York.

(Photo by A. Patzig.)

Bruce Price, Marvin & Davis, } Associated. Trowbridge & Livingston, Architects.



THE CAFE OF THE KNICKERBOCKER HOTEL.

Broadway and 42d Street, New York.

(Photo by A. Patzig.)

Bruce Price, Marvin & Davis } Associated
Trowbridge & Livingston, Architects.



A LOUNGING PARLOR IN THE KNICKERBOCKER HOTEL.
(Photo by Byron.)



THE BANQUET HALL OF THE KNICKERBOCKER HOTEL.

Broadway and 42d Street, New York.
(Photo by A. Patzig.)

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects.



THE MAIN DINING ROOM IN THE KNICKERBOCKER HOTEL.

(Photo by Byron.)

Broadway and 42d Street, New York.

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects.

actually enhances the architectural effect of its immediate surroundings. Its success confirms a conviction, which has long been lingering in the writer's mind, that the American mural painter will for the present have his best chance in decorating rooms in which people live and eat and drink, rather than in rooms in which they make speeches or expound the law, for in such rooms it may be possible to convert mural decoration into an entertaining and human branch of painting.



A PRIVATE DINING ROOM IN THE KNICKERBOCKER HOTEL.

Broadway and 42d Street, New York. (Photo by Byron.)

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects.

The other mural painting, which has shared the success of "Old King Cole," is situated in the so-called "flower-room." The flower-room of the Knickerbocker Hotel is situated at the bottom of the court, and corresponds to the palm-room of the other American hotels. It is a spacious apartment, finished in marble and Caen stone, and lighted from above. Its architectural effect is injured by an over-wrought canopy which serves as the ceiling for the center of the room, and which is entirely out of keeping with the simplicity of the rest of the design. On the large south wall of this "flower-room" Mr. James Wall Finn has placed a fanciful garden scene, which is a sheer delight and joy. Here again the sacred conventions that American wall painting should be good but lonely, and important but remote have been ignored. Mr. Finn's garden has nothing to do with a return to nature, and its designer has not cared whether it was Italian or not. It is a pleasure-garden, in which outlandish figures cut amusing antics, in which a clown may be making love to an American beauty of to-day, or harlequin talking to a lady from an Eighteenth Century picture, in which all sorts of people are doing all kinds of things, and everybody is having a good time. In short the garden is a fine work of irresponsible and humorous fancy,



A DRAWING ROOM IN ONE OF THE PRIVATE APARTMENTS.



PRIVATE DINING ROOMS IN THE KNICKERBOCKER HOTEL.

Broadway and 42d Street, New York.
(Photos by A. Patzig.)

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects.

peopled with the merry-makers of all times, and fairly abounding in adventure and incident. It is the sort of thing which never grows stale. People take longer to eat a meal than they do to drink a glass of beer, and Mr. Finn's decoration provides enough amusement and incident to accompany a ten-course dinner. The most casual eye as it returns occasionally to the wall may alight upon some new and entertaining incident, and he must be a dull dog whom it fails to cheer and exhilarate. The writer has not the slightest doubt that Mr. Finn's pleasure garden will both quicken and prolong the appetites of the patrons of the flower-room, and if so, Mr. Finn could not ask for a better testimony to his success. His decoration is, moreover, not only really gay, but it is really beautiful. Like Mr. Parrish, he has made the best of the long, low dimensions of his space by using the architecture of his garden in order to obtain emphatic vertical divisions. His picture is held admirably together, both by the general architectural composition and by the harmonious propriety of his scheme of color, while the vivacity of these colors contribute essentially to the gayety of the effect. Nobody with a spark of humor or fancy can fail to be diverted and amused; and we trust that hereafter restaurants and bar-rooms will not be decorated with lugubrious lunettes representing the "Sorrows of Psyche," or by panels in which convivial people are cheered up by a sight of the sufferings of Queen Guinevere.



One of the fountains seen in the restaurant of the Knickerbocker Hotel.

(Photo by Byron.)

There are other works of art in the Knickerbocker Hotel which deserve special mention, although their success has not been so emphatic and their propriety so complete as the "Old King Cole" and the Pleasure Garden. A painting of Mr. Frederic Remington's has been placed in a panel over the bar in the basement. It represents a furious charge by a troop of the U. S. Cavalry, and it has all the energy and life, all the observation of men and animals in action and feeling for them, which has given Mr. Remington his great reputation. Mr. Remington's picture, however, although placed in a panel on a wall is not and does not pretend to be a decoration. It is entirely without decorative propriety, either in composition or in scale, and is to be taken simply as an illustration of a stirring military incident. On the other hand, some copies by Mr. Henry B. Fuller, of a Rem-



VIEW IN A PRIVATE APARTMENT OF THE KNICKERBOCKER HOTEL.

Broadway and 42d Street, New York.
(Photo by A. Patzig.)

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects.



THE KNICKERBOCKER HOTEL FROM THE NORTHWEST CORNER OF BROADWAY AND 42D STREET.

Broadway and 42d Street, New York. (Photo by A. Patzig.)

Bruce Price, Marvin & Davis, } Associated.
Trowbridge & Livingston, Architects.

brandt and of Hals in the grill-room, are distinctly appropriate, both in subject and in handling. Rembrandt with Saskia in his lap drinking a glass of champagne is a fair pictorial equivalent of the usual legend about wine, women and song; and the jovial faces of the Hals portraits make pleasant companions either for a drink or a meal. These copies, it may be remarked, have been made from photographs and have been very cleverly done. One does not feel any deficiency in the color, and the rendering is broad and full of spirit. Besides Mr. Finn's decoration there is also in the flower-room a bas-relief, which no visitor to the hotel should overlook. It is a figure of Aphrodite rising from the waves, by Mr. John Flanagan, and it is a work of rare beauty. This relief would have been more appropriate in some other surroundings, particularly in view of the size and the proximity of Mr. Finn's painting, but in itself it is among the loveliest pieces of decorative sculpture ever wrought by an American.

Mr. Finn's contribution to the good looks of the Knickerbocker Hotel has not been confined to his mural painting. He has decorated practically the whole of the interior of the hotel, and he has done his work admirably. The scheme of the main restaurant, with its Caenstone walls, its tapestries, and its painted beamed ceilings is simple, dignified and effective. The café on the Forty-second street side of the building is also an unusually simple and interesting room. Instead of being overlaid, as usual, with gilt and heavy plastered decorations, it is a plain white room, with seats around the wall like a French restaurant, and its effect is bright, clean and cheerful. A similar scheme has been adopted for the banquet-room on the second floor, and if in this instance the white walls are rather too much in evidence, the error could be easily remedied by covering them with an appropriate fabric. Mr. Finn's taste, however, has not only had much to do with the decorations of the large public rooms, but with the many thousand incidentals which go to make the appearance of the hotel attractive. It was he who secured the admirable copies by Mrs. MacMonnies which may be seen in the banquet hall and the other rooms on the second floor; it was he who supervised the selection of the wall-papers in the bedrooms; it was he who secured the round French clocks, which are to be found in all parts of the hotel; and it was he who found and bought the thousands of amusing French prints, which form such an agreeable contrast to the usual hotel pictures. He more than any other single persons is responsible for the appearance of the interior of the hotel, and he is to be heartily congratulated on his work. There are few hotels in the country in the appearance of which such uniform good taste has been displayed, and there is certainly no hotel which will owe so much of its success to its aesthetic distinction. Its architecture is, unfortunately, not as successful as its decorative scheme. Certain architectural errors have been made, of which the failure to insert a partition between the restaurant and the flower-room is one of the worst, because it seriously hurts the architectural effect of both of these rooms. But even after all deductions have been made, the hotel marks a real advance in the art of making that sort of a building legitimately entertaining to its patrons.

H. D. C.

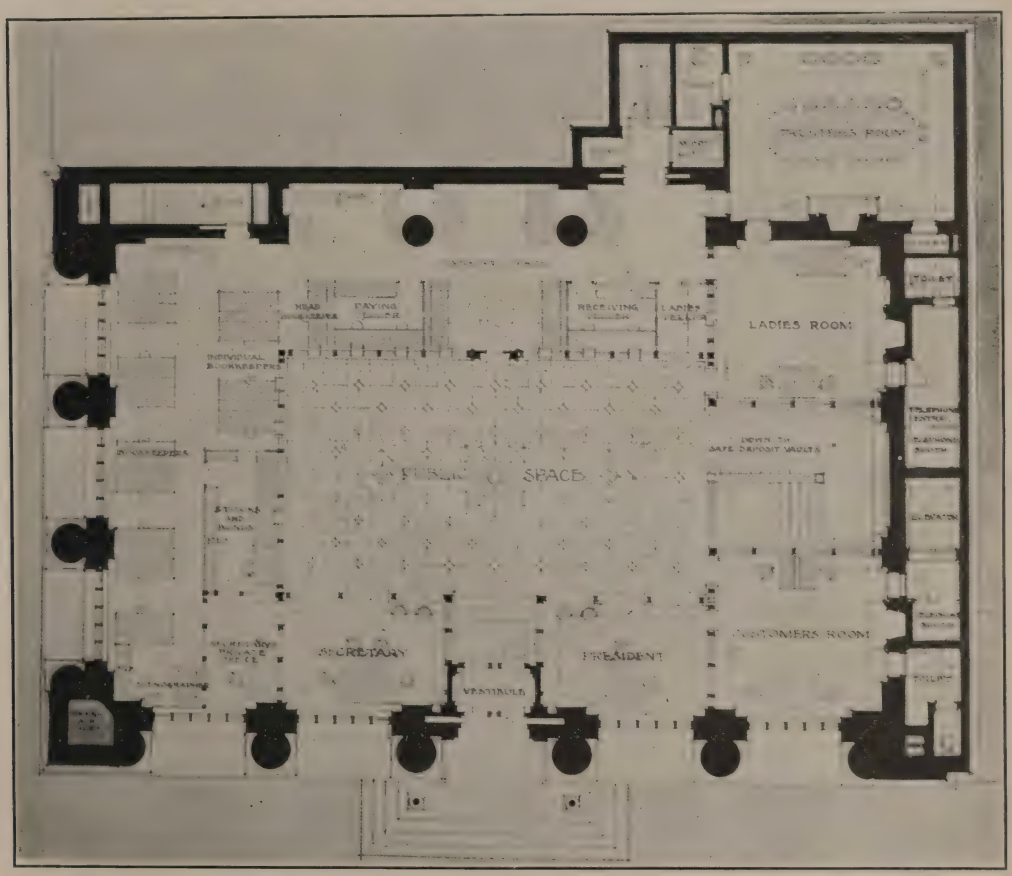


THE ROCHESTER TRUST AND SAFE DEPOSIT COMPANY AND THE ROCHESTER GERMAN INSURANCE BUILDING.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.

Two Rochester Banks

The Rochester Trust and Safe Deposit Company—The Rochester German Insurance Building

A recent issue of THE ARCHITECTURAL RECORD* discussed the influence of the work of the firm McKim, Mead & White on contemporary American architecture. In this article the authors made the point that it is not only through their work that this firm is exerting an influence, but also through the men who have received and are receiving in its employ a training which must needs be the result of their more or less personal association with the various members of that firm. To substantiate this statement we need but look at some of the work that has been done in the last ten or fifteen years by any one of several younger architects who were trained in the offices of Messrs. McKim, Mead & White.



PLAN OF BANKING ROOM—ROCHESTER TRUST AND SAFE DEPOSIT COMPANY.
Rochester, N. Y. York & Sawyer, Architects.

The illustrations before us are examples of work which shows plainly the influence alluded to above. Not that one would point out these buildings as McKim, Mead & White work, but there is in them a certain largeness of conception and dignified simplicity which has become so typical of their work and which

*Sept., 1906.



ENTRANCE SIDE OF THE ROCHESTER TRUST AND SAFE DEPOSIT COMPANY.

Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.



DETAIL OF THE ENTRANCE.

The Rochester Trust and Safe Deposit Company.

Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.



THE BANKING ROOM, LOOKING TOWARD THE BANKING SPACE.
The Rochester Trust and Safe Deposit Company.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.

has been acquired by Messrs. York & Sawyer, the designers of these two banks. This firm has had a wide experience in designing bank buildings of various kinds, among the more important of which are: The Franklin Savings Bank in New York City; the Riggs National Bank and the American Security & Trust Company, which occupy adjoining sites in Washington, D. C.; the Mercantile Trust & Deposit Company and the Provident Savings Bank, both in Baltimore; The National Bank of Albany and The Trust Company of New Jersey at Hoboken; and the two banks which are the subject of this discussion.

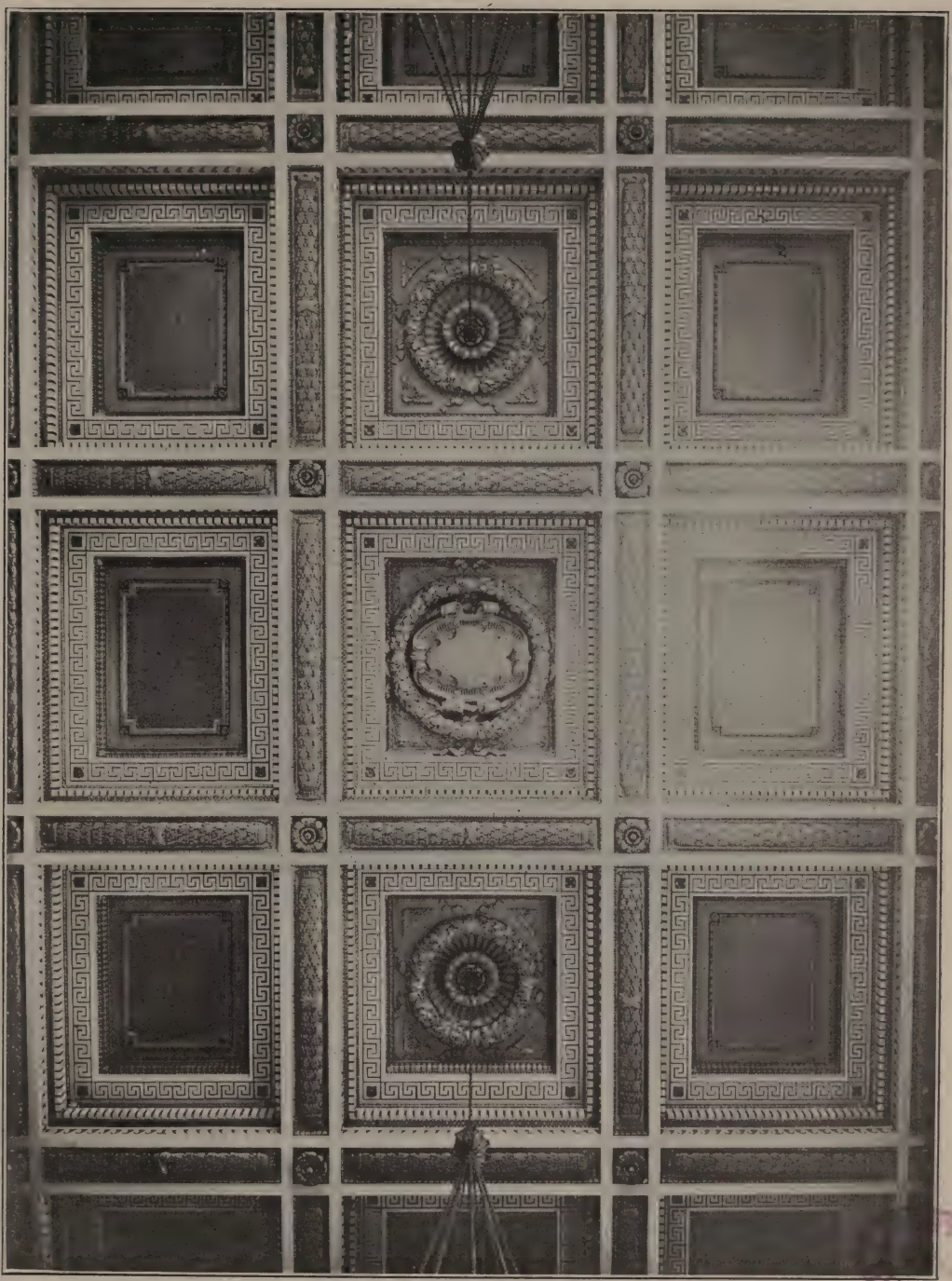
Mr. Philip Sawyer, of York & Sawyer, said, in an article on banks, in a recent issue of *The Architectural Review*, that "When an architect has built three banks he may feel that he has really obtained a grip on the subject, and he tackles his fourth with the idea that he can tell the banker what he should have; when he has built a dozen, he approaches the next one in a humble spirit, and is not surprised to see his well-studied arrangement turned upside down by the objection that, 'This is a right-hand bank; the Tellers go on the right of the entrance; they always have and they always will,' or 'It is all very well to have the Receiving Tellers near the main entrance, but we do not want the Paying Tellers near the entrance at all; they must be in the back of the room as far away as possible,' or 'You have provided no cage for the D. & H. Railroad; it will have to be placed in connection with the General Bookkeeper and must have a window to the Money Clerk, and another upon the public space.' "



ANOTHER VIEW OF THE BANKING ROOM.
The Rochester Trust and Safe Deposit Company.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.



THE BRONZE ENTRANCE DOORS.
The Rochester Trust and Safe Deposit Company.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.



THE CEILING OF THE BANKING ROOM, DECORATED BY MR. ELMER E. G. GARNSEY.
The Rochester Trust and Safe Deposit Company.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.

It was with an experience derived from criticisms like these that Messrs. York & Sawyer attacked the problems of the Rochester banks, giving proper consideration to the intricate business of modern banking, yet bringing to this practical knowledge a sound artistic training and producing by the combination of these two elements pleasing and workable buildings.



THE CUSTOMERS' ROOM.
The Rochester Trust and Safe Deposit Company.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.

In the Rochester Trust and Safe Deposit Company's building, situated at the "Four Corners," at Main and Exchange Streets, the most prominent location in Rochester, and the site of the old Smith Arcade, the firm York & Sawyer presents its latest solution of the bank problem. It is an example of the modern type of a low structure containing practically a single room and used exclusively for the purposes of the institution. The exterior is of pink Milford granite, the beautiful texture of which is exceptionally well brought out in a detail of the entrance which we reproduce herewith. Another view shows the rich entrance doors which are of cast bronze, as are all the grilles and lamps on the building. The interior of the banking room presents a construction which if not unique serves to refute the statement that our architecture is all for display and lacks the real construction found in historic work. The interior of this room to the top of the cornice is of Vermont marble laid in courses of deep blocks, a construction identical with that employed in the exterior granite work and it is in this spirit of honesty and solidity that every detail has been de-

signed and executed. The counter is of Connemara marble with a counter-screen of bronze of a severe and simple design. The floor, as shown in the view of the banking room looking toward the banking space, is unusually elaborate, being of Connemara, red-Numidian, black and gray marbles against a background of Siena and Knoxville. In the center of the pavement is the circular seal of the bank. The bronze writing tables and lamps shown in this view bear witness also to the care with which the details have been considered. The ceiling of this room is worthy of study as a piece of very effective interior decoration. It has been carried out in tones harmonizing with the marble and bronze, and is the work of Mr. Elmer E. G. Garnsey, who decorated the Congressional Library in Washington.

The offices and working space surround the public space from which broad stairs lead down to the safe deposit vaults; the booth room being placed under the sidewalk. This portion of the basement is also walled with Vermont marble and roofed with a constructional vaulting of Guastavino tile.

The directors' room is finished in mahogany with a mantel of Connemara marble. The walls above the high wainscot are covered with hand-tooled leather.



VIEW IN THE BASEMENT.
The Rochester Trust and Safe Deposit Company.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.

Next door to The Rochester Trust and Safe Deposit Company is the building of The Rochester German Insurance Company, the entrance floor of which is occupied by The National Bank of Rochester. This building is not new, Messrs. York & Sawyer having merely added several stories, remodeling the exterior as far as possible and redecorating and otherwise embellishing the lower stories.

In view of the circumstances it would hardly be fair to criticise the exterior as the work of this firm. Be it said, however, that they have made the most of the conditions and have given at least some character and distinction to what was formerly a commonplace and otherwise expressionless building. The porch deserves a little notice; the two massive Doric columns are monoliths of a beautiful polished green granite. Panels of the same material are employed between the windows of the upper stories.

In this building we find also a very impressive banking room, that of the National Bank of Rochester, the bronze work of which is rather more ornate than that in the Trust Company. The walls are lined with citron-veined Norwegian marble, the counter being of Skyros with a black Belgian base. The floor is of Knoxville tile bordered with green Champlain. The total effect of the room, though richer than that of the banking room in the Trust Company, lacks, however, some of the repose and dignity of the latter.

The directors' room shown herewith, and situated on an upper floor, is finished in English oak, the mantel being of Alps-green marble. The coffered barrel-vault ceiling gives the room a pleasing air of largeness and importance. Everything has been done in designing the interiors of this room and the banking room to make a complete and harmonious whole.

And even if the National Bank is not as lofty as the Trust Company, and otherwise smaller, there is yet apparent



THE DIRECTORS' ROOM.
The Rochester Trust and Safe Deposit Company.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.



THE BANKING ROOM OF THE NATIONAL BANK OF ROCHESTER.
The Rochester German Insurance Building.
(Photo by Alman & Co.)

Rochester, N. Y

York & Sawyer, Architects.



THE DIRECTORS' ROOM OF THE NATIONAL BANK OF ROCHESTER.
The Rochester German Insurance Building.
Rochester, N. Y. (Photo by Alman & Co.) York & Sawyer, Architects.

in it the same spirit of largeness of conception and architectural propriety as in the latter.

While there is unmistakably discernible in the architecture of these two banks a relationship with the architecture of Messrs. McKim, Mead & White, a distinctive quality makes itself apparent. Does this quality consist in a greater departure from historical precedent, in a freer handling of detail, in an attempt at what a layman would call more originality? Whatever may be the reason for the presence of this distinctive quality it is apparent that the designers have somehow, by some means, introduced their personalities into their architecture. The criticism so often directed against the buildings of the older firm, that they are archæology and not architecture in that they copy historic buildings and attempt to make them serve new purposes, does not hold in the two Rochester banks. But whether the work of these younger architects is any the better for differing in this respect from the older firm's work is a question that may properly be debated either way. Some architects, especially men who have received their training chiefly at the Beaux Arts and are, therefore, apt to favor French influence in American architecture, would be inclined to decide the question affirmatively, while others with different inclinations would decide it negatively. It may be said that, on the whole, the question of departure from architectural precedent is rather more particular than general, each individual case possessing its own advantages and disadvantages. It is a good maxim of architectural conduct to follow a good precedent for a given case if such a thing exists and if one decides to depart under these circumstances one should be very sure of one's new principles. A flagrant disregard of this maxim produces so many of our *original* but architecturally deplorable buildings.

In the two bank buildings just discussed there can be no cause for complaint on the score of unwise departure from good precedent. While it is hardly possible to reconcile perfectly a one-story building with a ten-story neighbor, the buildings look well together and are good foils to each other, the material of the high building (red-brown brick and reddish Maynard stone) forming a good contrast to the pink granite of the Trust Company. The composition of the Trust Company is one of large motives, emphasized by simple and well-managed details. The building expresses its purpose and is no doubt well adapted in its interior arrangements for transacting the business of the bank in an economical and convenient manner.



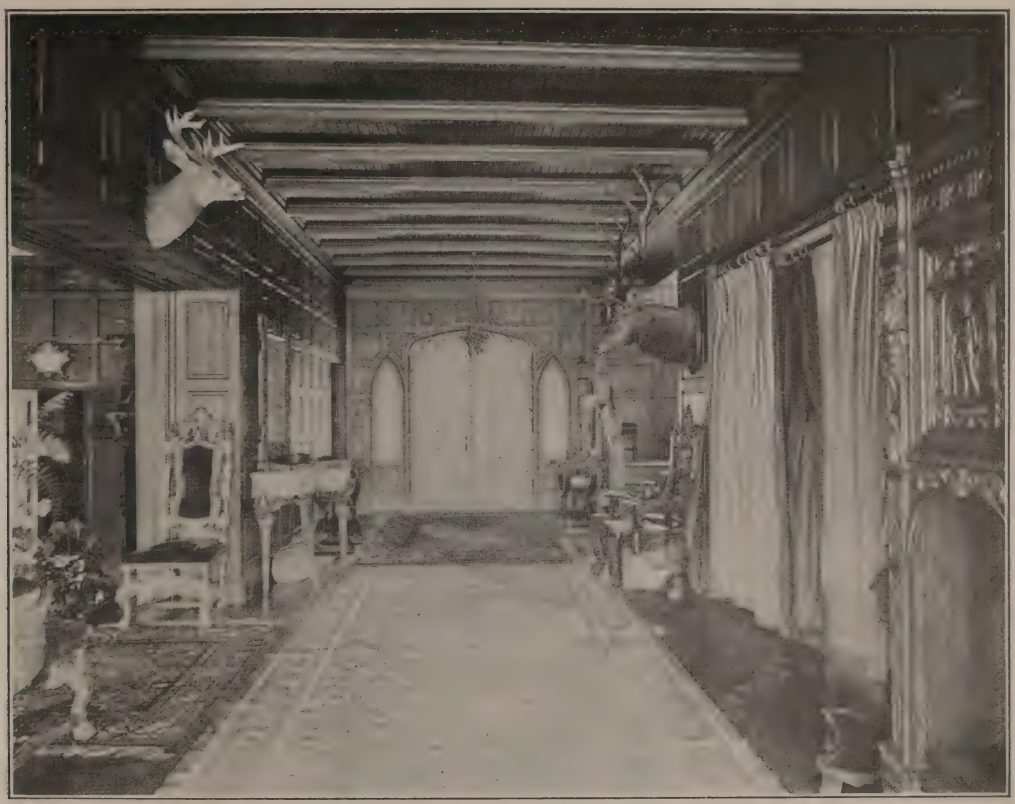
THE HOUSE OF MR. SAMUEL FROTHINGHAM.

Lenox, Mass. (Photo by Alman & Co.) Adams & Warren, Architects.

Two Jacobean Houses

A contemporary American, who wishes to build a brick house in the country, is restricted practically to a choice between two styles—the Georgian and the Jacobean—and with the catholicity of taste which is his most noticeable aesthetic characteristic he is as likely to choose one as he is the other. One gets the impression that on the whole brick is losing ground as the favorite material for expensive country houses as compared with stucco or concrete; but when brick is selected there does not seem to be any salient tendency to use it as the embodiment of one rather than the other of these two styles. New Georgian houses are perhaps rather more numerous than new Jacobean houses, because it is easier and more appropriate to design a small house in the Colonial or Georgian than it is in the Jacobean tradition; but when it is a matter of selecting the style for a larger house the Jacobean houses more than hold their own, as may be seen from the two new country residences which are illustrated herewith.

In looking over the photographs of a large number of these brick houses we can, however, hardly escape the conclusion that when one rather than another of these styles is preferred the reasons for the selection are somewhat arbitrary. One owner prefers a Jacobean house because during his travels abroad a house of that kind had caught the eye or appealed to the fancy of his wife, or the architect will prefer a Jacobean design because such a design suits his own hab-

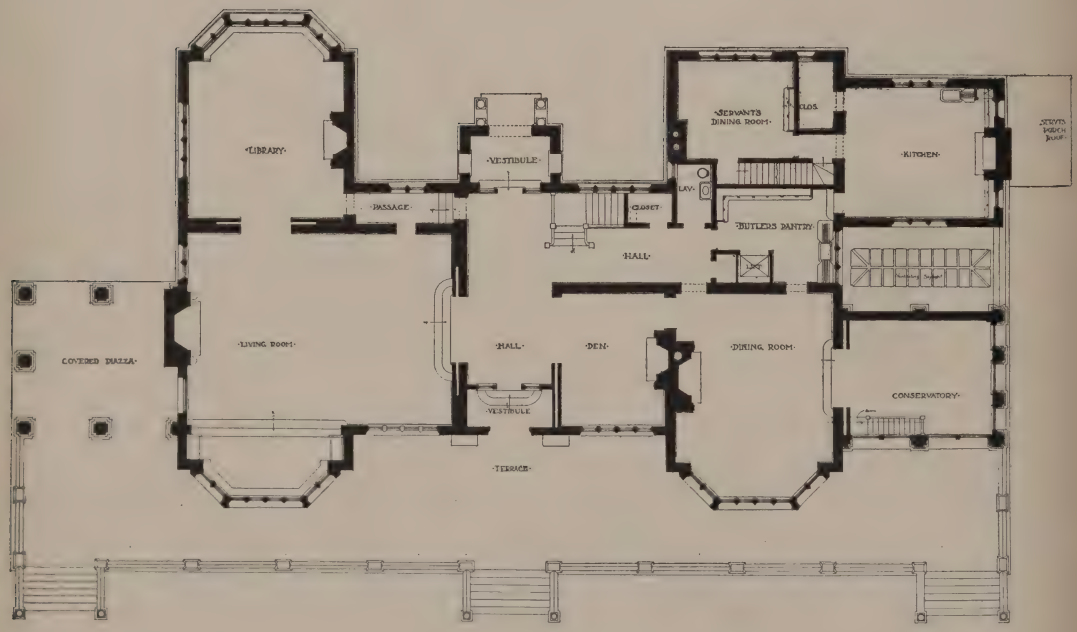


THE HALL—MR. SAMUEL FROTHINGHAM'S HOUSE.
Lenox, Mass. Adams & Warren, Architects.
(Photo by Alman & Co.)



SECOND FLOOR PLAN—MR. SAMUEL FROTHINGHAM'S HOUSE.

Lenox, Mass. Adams & Warren, Architects.



FIRST FLOOR PLAN—MR. SAMUEL FROTHINGHAM'S HOUSE.

Lenox, Mass. Adams & Warren, Architects.



REAR VIEW AND CARRIAGE DRIVEWAY—MR. SAMUEL FROTHINGHAM'S HOUSE.

Lenox, Mass. (Photo by Alman & Co.) Adams & Warren, Architects.

its and methods of architectural thought. Preferences of this kind are, of course, in themselves perfectly valid, but one gets the impression that they are allowed rather too much influence. As a matter of fact the Jacobean and Georgian styles each has architectural characteristics which makes it look better under certain special conditions, and these conditions are not sufficiently considered when the question of the style of a house is under consideration. A Jacobean house has a chance of looking very well on one kind of a site, whereas it has very little chance of looking well on another kind of site; and the man who has taken a fancy to a particular early English house fails wholly to understand how much of the beauty of its effect depends upon its peculiar location and its natural surroundings. The architect will, of course, have a better understanding on this point, but very frequently he gives in to his client's preferences without making a very strong stand in favor of properly adapting the form of the house to its location.

There can be no doubt, for instance, that a Jacobean house rarely looks well on or near the top of a bare hill. Under such conditions its outline and masses seem to be an excrescence on the countryside—as anyone may see by looking at the appearance of Mr. Henry W. Poor's house at Tuxedo from the other side of the valley. This structure does not settle down into the surrounding landscape. It looks as if it were perched insecurely on its site, and as if at any moment it might spread its wings and fly away. No, a house that projects from a bare hilltop needs to have the horizontal lines emphasized and its masses subdued to the bigger mass of the hill. A Jacobean dwelling tends to look very much better on a comparatively flat site, and it needs, also, the assistance of vines and many trees before it can properly take its place in the countryside. The peculiar beauty, the great and enduring charm of the old



THE LIVING ROOM—MR. SAMUEL FROTHINGHAM'S HOUSE.
Lenox, Mass. Adams & Warren, Architects.
(Photo by Alman & Co.)



VIEW FROM MAIN ENTRANCE, LOOKING OUT ON THE TERRACE.
Mr. Samuel Frothingham's House.
enox, Mass. Adams & Warren, Architects.



MR. SAMUEL FROTHINGHAM'S STABLE.
nox, Mass. Adams & Warren, Architects.
(Photo by Alman & Co.)

English Jacobean houses, depends not so much on the original propriety of the design as upon the changes which have been wrought by many generations of possessors who have really lived in their houses and have frequently been people of taste and architectural knowledge. Strip a house of this kind of the results of this constant attention, denude it of its vines and shrubbery and trees, and it becomes a comparatively bare and unattractive thing—particularly when it is unfinished without the mellowing which vines, shrubbery and trees alone can give, but the Georgian house is architecturally a much more complete and finished product than a Jacobean house. Many Georgian dwellings, for instance, look extremely well on comparatively small suburban lots—under conditions, that is, which have very little chance for effective planting—whereas Jacobean houses rarely look well under similar surroundings. The Jacobean style is es-



THE DINING ROOM—MR. SAMUEL FROTHINGHAM'S HOUSE.
Lenox, Mass. Adams & Warren, Architects.
(Photo by Alman & Co.)

placed on a site, from which it is bound emphatically to project, no matter how much the surrounding foliage may grow.

The admirers of the Jacobean forms will doubtless answer that the Georgian house needs the effect of time, foliage and care quite as much as does the Jacobean house and that when its surroundings are raw and unfinished the effect of the former is injured no less than the effect of the latter. Such, however, is not altogether the case. It is true, of course, that every country house will look raw and sentially transitional, the child at once of the late middle ages and the early Renaissance; and it was never developed into a finished and coherent set of architectural forms. The people who lived in these houses did more for their essential beauty than did their architects. They are fundamentally and exclusively an English product, and a modern American Jacobean house will require from its owners the same constant attention and lasting occupation upon which so much of the peculiar effect of the old houses

depends. The Georgian house, on the contrary, is fundamentally the architect's product. It is the final outcome of the application of the spirit and principles of Renaissance architecture to the country dwelling, and while the Georgian house, as we imitate it, has many peculiarly English characteristics, it is also closely allied to the final product of the Renaissance spirit and principles in Italy and France. It is based upon a



SECOND FLOOR PLAN—RESIDENCE OF G. L. BOISSEVAIN, ESQ.
Mount Kisco, N. Y. George E. Wood, Architect.



FIRST FLOOR PLAN—RESIDENCE OF G. L. BOISSEVAIN, ESQ.
Mount Kisco, N. Y. George E. Wood, Architect.

broader, more communicable and more highly developed technical tradition; and it is consequently a safer style for Americans of to-day than is the Jacobean.

By asserting, however, that the Georgian forms can be more safely used under contemporary conditions, we do not mean that they are under all circumstances better. Under the conditions indicated above the Jacobean forms have a chance of being made entirely appropriate, and the undeveloped character of the Jacobean forms will of itself doubtless prove to be both a temptation and an inspiration to certain architects. It would be perfectly possible to take that combination of gabled masses and Renaissance detail which is named Jacobean and modify both its masses and its details in a different and better way than it has been modified in the past—in a way which would give it more architectural integrity than it has ever had, more simplicity and more propriety. But unfortunately no such modifications are made at the present time. The old Jacobean forms are copied with more or less fidelity; but they are not used with any sense of their latest possibilities or their peculiar value.

Of the two Jacobean houses illustrated herewith, that of Mr. Frothingham looks better, chiefly because it already has the advantage of being a setting of foliage. One has only to compare the illus-



VIEW OF FRONT—RESIDENCE OF MR. G. L. BOISSEVAIN.
(Photo by A. Patzig.)

Mount Kisco, N. Y.

George E. Wood, Architect.



VIEW OF FRONT, SHOWING THE PORCH—RESIDENCE OF MR. G. L. BOISSEVAIN.
Mount Kisco, N. Y. George E. Wood, Architect.



REAR VIEW—RESIDENCE OF MR. G. L. BOISSEVAIN.
Mount Kisco, N. Y. George E. Wood, Architect.

(Photos by A. Patzig.)

trations of these houses in order to appreciate what an immense improvement the growth of a few years in shrubbery and trees makes in the appearance of a house. There is room for a good deal of additional planting in the neighborhood of the Frothingham house, and when the vines and trees have the advantage of ten additional years' growth the place will look still better, but even at the present time the architecture is beginning to be subdued to its natural surroundings. It is just the kind of country house which was and will be immensely improved by time and care. The actual design of the exterior has no great distinction. It is a respectable, thorough bit of work without either any considerable merit or any palpable defects. But this very negative character, does not necessarily prevent the gradual making of a country place which is full of individuality and charm. Unless the architecture of a country house is in the beginning egregiously bad, the owner of it always has it in his power to give a positive character by watching over and guiding the necessary modification and growth which time and actual occupation bring about.



WATER TOWER ON MR. G. L. BOISSEVAIN'S ESTATE.
Mount Kisco, N. Y. George E. Wood, Architect.
(Photo by A. Patzig.)

The Boissevain house at Mt. Kisco is not only in a cruder and less developed condition than the Frothingham house, but it is less carefully designed. The architect has not, indeed, been afraid to treat the Jacobean forms with the utmost freedom, but his modifications have not been any too successful. Barring the wing of the house, which contains the dining-room on one side and the loggia on the other, the building is, indeed, more Georgian than Jacobean; but for some reason this wing is treated with a gable which breaks the cornice line and kills the balance of the composition. The corresponding wing on the other side also breaks through the line of the cornice, but it is not crowned with a gable. No doubt this wing would have looked very badly if it had been crowned with a gable; and the point is not that the façade should have contained two symmetrical gables, but that it should not have contained any at all. The single gable not only breaks the unity of the design, but it also distorts the sky line. Its only advantage is that of obtaining somewhat more space in an attic room, and such an advantage does not seem to be important enough to justify the utter sacrifice of the architectural integrity of the building. With this gable omitted the Boissevain house would have a smart and discreet piece of Frenchified Georgian design, whereas now it is an incoherent and almost a nameless thing.

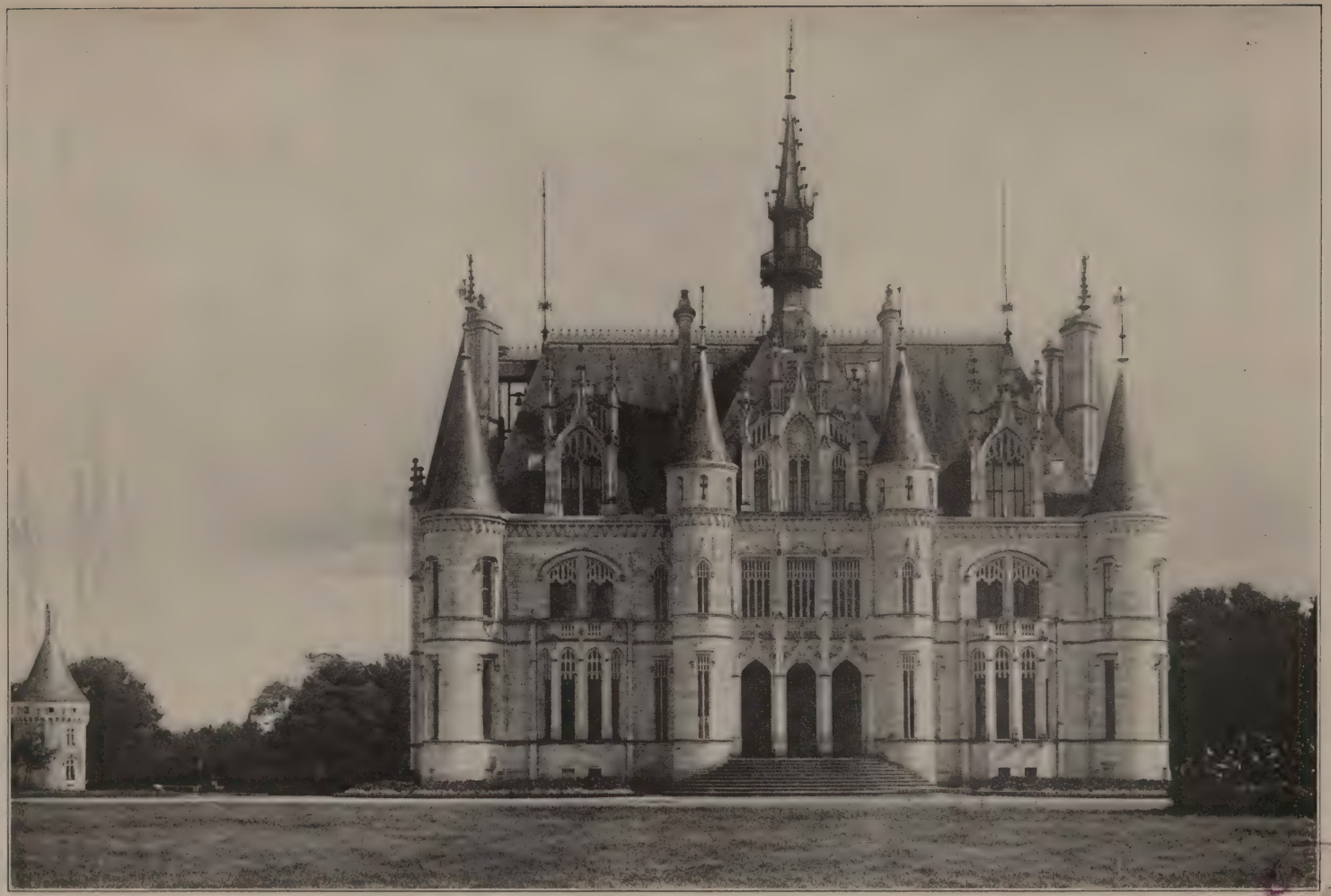
A Modern French Château

The ancient province of Touraine is essentially a land of old châteaux. Its name calls up, in the mind of the architect, the matchless grace of Blois, Azay-le-Rideau and Chenonceaux, the stolid magnificence of Langeais and Ussé, and the no less charming features of such venerable buildings as Chaumont, Amboise, Montreuil-Bellay, Réaux, La Guerche, and Montrésor. He does not think of it as a place where modern residences are to be found and studied. Yet these, during the last fifty or sixty years, have sprung up in large numbers on the banks of the Loire, and whilst traveling in that delightful part of France he would do well to note them, in order to make a comparison between the work of the past and that of the present.

During my last sojourn in Touraine I made a point of visiting both the new and the old châteaux, and with this very object of comparison. It was a most profitable lesson, since it strengthened my love for the beautiful Renaissance and Pre-Renaissance dwellings, and at the same time brought home to me once more the fact that, in architecture, if not in other arts, the taste and workmanship of former days were vastly superior to what they are at the present time. This superiority can best be seen when the old and the new are side by side, as, for instance, in the case of a building which has undergone restoration. Even at Blois and Cheverny, where the most competent French architects were employed to make good that which had been destroyed either by Time or Man, the inferiority of modern work is woefully apparent. One naturally inquires into the reason for this. "C'est parce que la



THE CHÂTEAU FROM THE LAKE—CHÂTEAU DE COMACRE.
Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.



THE ENTRANCE AND PRINCIPAL FAÇADE—CHÂTEAU DE COMACRE.

Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.



THE OUTHOUSE, SHOWING ONE OF THE TOWERS OF THE OLD CHÂTEAU—CHÂTEAU DE COMACRE.
Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.

main-d'oeuvre est trop chère aujourd'hui"—"It is because manual labor is too dear nowadays"—I was repeatedly told. But that is only half the truth. The costliness of labor explains much, but it does not explain the decline in taste.

If you would have an example of this decadence even more striking than that to be observed at any of the châteaux which have required restoration (and failed to inspire the architect of the modern house.

Before entering on a description, however, I must give a few necessary details about the position and locality of Comacre, as well as about the families who have owned the estate, one of the finest in Touraine, during the past three hundred years. It is situated near Sainte Catherine de Fierbois, a small village which is reached by driving from

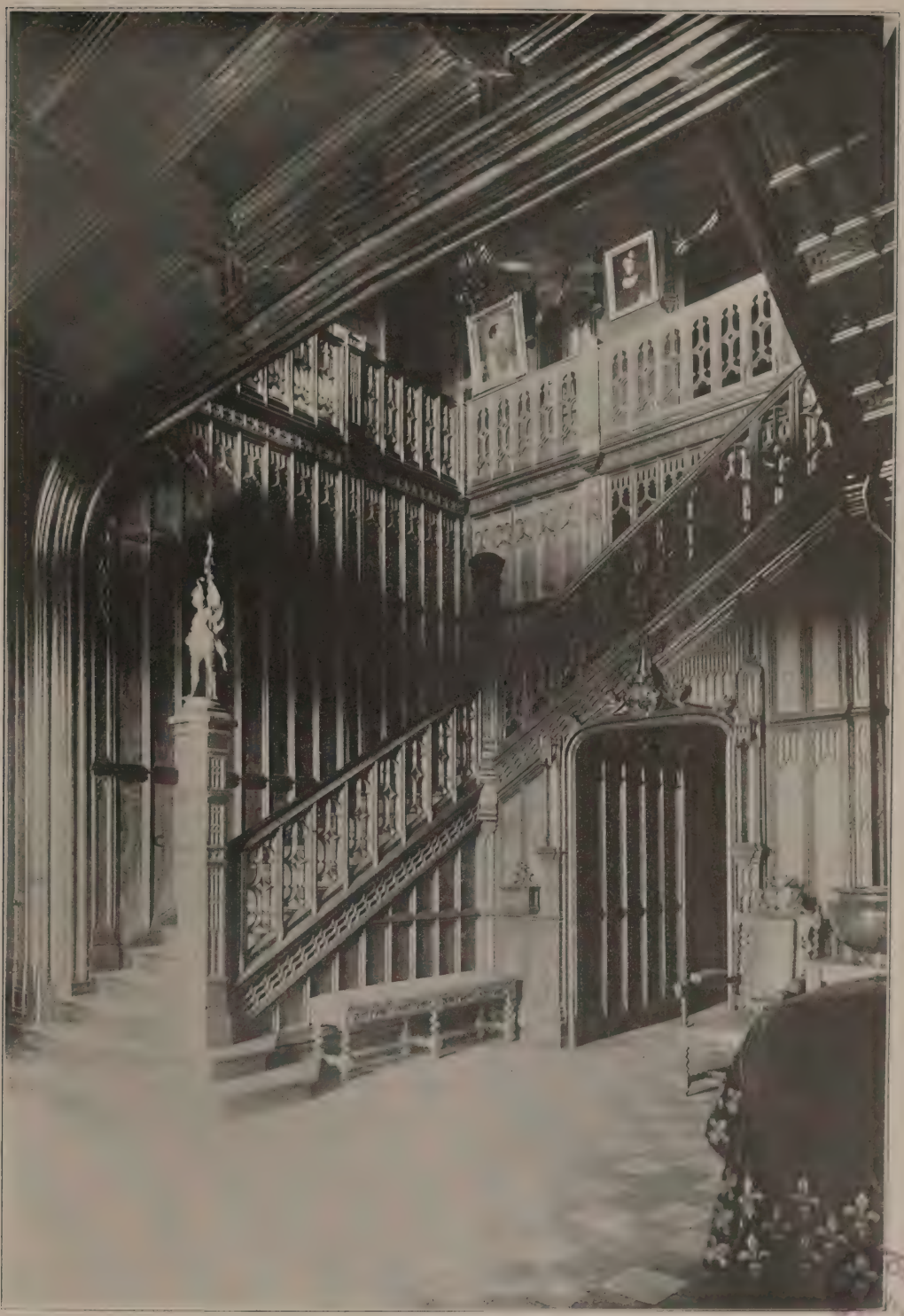


ENTRANCE TO THE PARK—CHATEAU DE COMACRE.

Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.

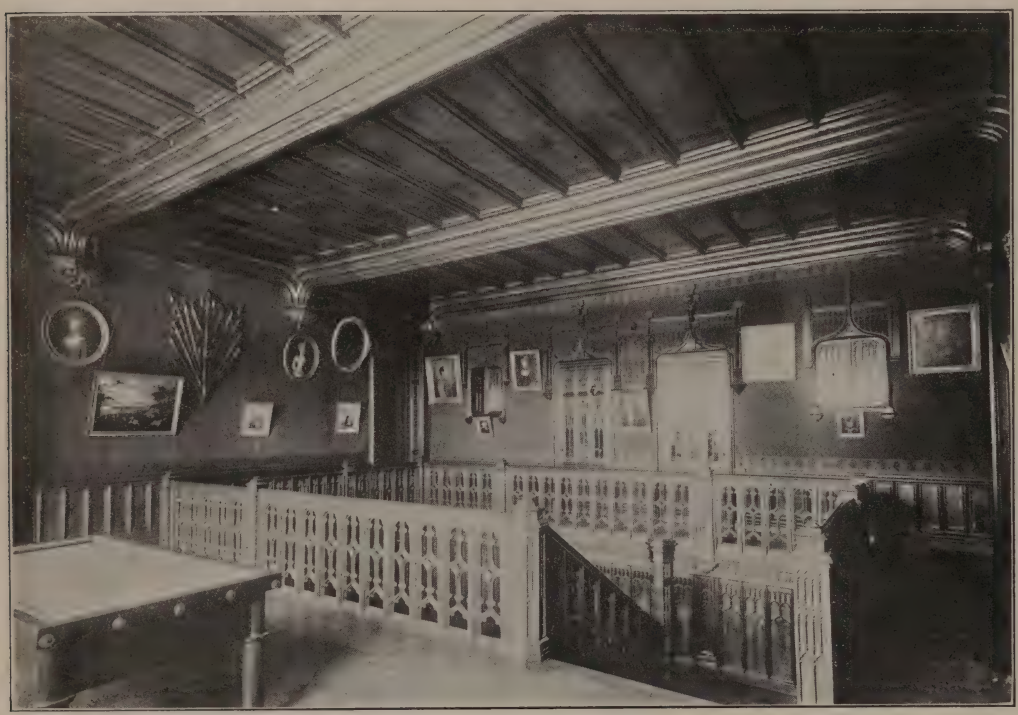
where is the château which has not had to undergo that painful operation?), I should recommend you, when on your next visit to France, to go to the Château of Comacre. There you will find an entirely modern building, built in a style which is said to be that of an English manor-house of the fourteenth century. The ancient château that it replaced has been swept away, with the exception of a single tower, a small yet important vestige which, unfortunately,

Sainte Maure, the nearest railway station. The country—extremely fertile and well-wooded—is full of traditions and rich in ancient monuments. It was the scene of some of the exploits of Charles Martel, who, after defeating the Saracens on the Landes of Miré, in 732, pursued and exterminated them in the woods of this part of Touraine. In returning thanks to Heaven for this victory, he is said to have deposited his sword in a little chapel which stood in



THE VESTIBULE AND STAIRCASE—CHÂTEAU DE COMACRE.
Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.

the midst of a wood, on whose site Sainte Catherine was afterwards built. There it remained forgotten up to 1735, when a miracle once more drew attention to the relic, until Jeanne d'Arc, guided by her "voices," paid a special visit to Fierbois to take possession of it. With this sword, tradition says, the Maid of Domrémy drove the English out of France. In recognition of this service, Charles VII. rebuilt the chapel of Sainte Catherine de Fierbois in the Flamboyant style of the fifteenth century. This building, which is one of the finest of its kind in the whole of Touraine, and which must not on any account be missed whilst you are at Comacre, was completed either during the reign of Charles VIII. or under Louis XII., judging by the ermines of Brittany which are to be seen here and there on the building and by the charming wooden altar in the choir decorated with the arms of France and Brittany. The adjoining estate of Comacre received its name from the Comacre family, into whose possession it came during the first half of the sixteenth century, and who owned it until 1812. In that year Louis Charles de Comacre sold it to a M. de la Haye. Once more, in 1838, it changed hands, the new owner being François Henri Antoine, Marquis de Bridieu, who, however, did not keep it many years, since we find that he sold it in 1845 to Maximilien Louis Charles Lignaud, Marquis de Lussac, and to his wife, Marie Amable Antonie de Rouën de Bermonville. Up to this date the ancient château of Comacre had served as a residence for the owners, but it then became necessary to rebuild, owing, I believe, to the almost total destruction of the old house by fire; so the Marquis de Lussac set to work to find an architect who was capable of planning a dwelling on a particularly luxurious scale, such a house, he hoped, as did not exist anywhere in this part of the country. A man of immense wealth, he determined that he



THE PICTURE GALLERY IN THE UPPER STAIRCASE HALL—CHÂTEAU DE COMACRE.
Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.

would have what he wanted no matter what it cost him, and such, in fact, was the tenor of the orders which he gave to M. Châteigner, a well-known architect of Amboise, who was selected to see the work carried out.

The building of this château, small though it is compared with some of the other country houses of Touraine, took no fewer than ten years, during which time the workmen were almost constantly occupied. The architect chose a site not far from that of the old château, a single tower of which, as I have already said, remained standing. This he utilized as part of the out-houses; he added to it the stables, coach-houses, and a small house for the farm-bailiff, a house which many people, if they had the choice, would select as a residence in preference to the château itself. In planning the Marquis de Lussac's house, the architect decided to construct it on the most symmetrical lines; it was to be an oblong building, with the corners terminated by round towers, the central entrance flanked by similar towers, and the whole surmounted by a central belvedere and spire. To this, in itself, there would have been no objection had the proportions of the château been good, and had it presented a less stiff, less metallic appearance than it does. Viewed from no matter what position, it is never a pleasing building, for the simple reason that it lacks the essential qualities of the style it is supposed to imitate. Ornate and costly it is without a doubt, but one would have preferred to have seen a little less ornamentation and a little more evidence of a sound knowledge of the architecture of the period which it was intended should be copied.

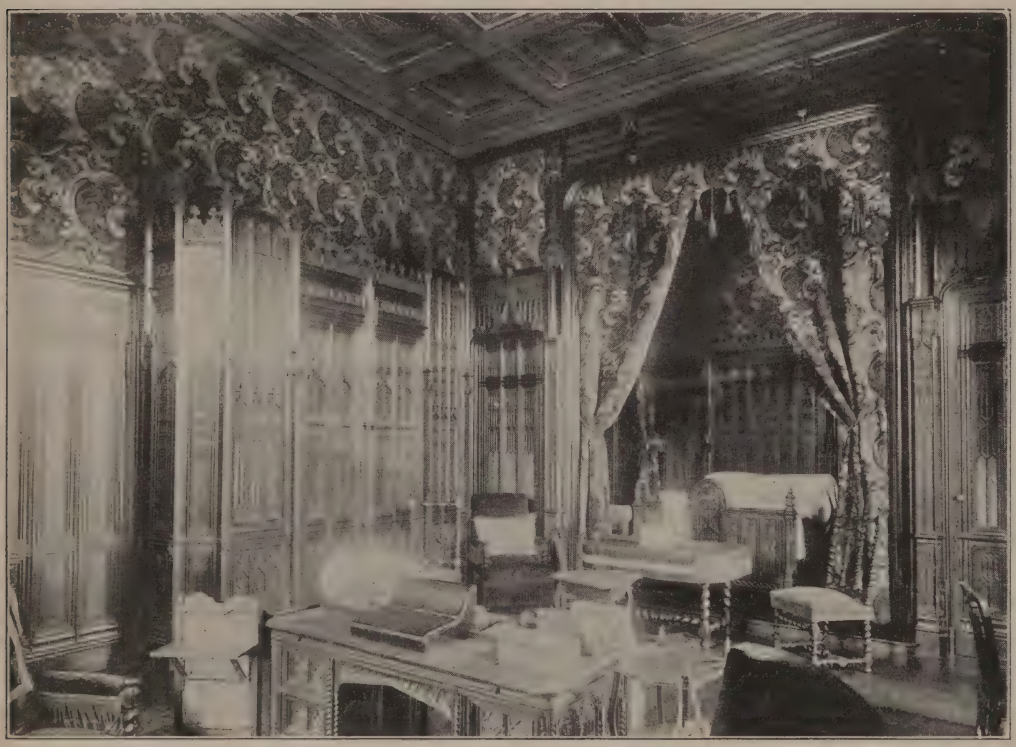


THE DRAWING ROOM—THE PORTRAITS ARE OF THE FIRST OWNERS OF THE CHÂTEAU DE COMACRE.

Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.

Having once passed through the intricately carved doors, one's impression, however, is more favorable. Here,

again, there is great lavishness of decoration. The vestibule and staircase, in dark, well-seasoned oak, like all the woodwork in the château, is delicately carved, and similar care has been shown in the ornamentation of the double drawing-room, the Marquise de Lussac's bedroom, and the dining-room. In these and other rooms nearly all the furniture has been specially made from designs furnished by M. Châteigner. Despite the lavish carving and decoration which



THE MARQUISE DE LUSSAC'S BEDROOM—CHÂTEAU DE COMACRE.
Ste. Catherine de Fierbois, Touraine. M. Châteigner, Architect.

can be seen on all sides, the interior of the château is not as uncomfortable as might be supposed. There are, indeed, several rooms which are exceedingly home-like, these including the Marquise de Lussac's bedroom, the drawing-room (on the walls of which are portraits of the first owners of the château), and the little picture gallery at the top of the staircase.

The cost of building this French château, which is a typical example of what the modern French architect produces not only in Touraine, but in other parts of the country when he attempts to work in an ancient style, will probably never be exactly known; but it is estimated that the Marquis de Lussac, who died on July 13th, 1878, expended not far short of $300,000. So, at any rate, I was informed by the representative of his son, the present owner.

In one respect Comacre cannot be harshly criticised. However much one may be inclined to find fault with the manner in which the château has been built, one can have nothing but praise for its setting. The park, with its picturesque lake and its bosky nooks and corners, is admirable. Nature has been allowed to have more than half her way, and the result forms a striking contrast to the stiff and formal parks which are usually to be found around French châteaux.

Frederic Lees,
Officier de l'Instruction Publique.

The Northern Trust Company's New Bank Building

CHICAGO FROST & GRANGER, Architects

Mr. Hartman Kuhn's House

DEVON, PA. HORACE TRUMBAUER, Architect





Chicago. THE NORTHERN TRUST COMPANY'S NEW BANK BUILDING. Frost & Granger, Architects.



NORTHERN TRUST COMPANY—STAIRCASE TO MAIN FLOOR.
Chicago. Frost & Granger, Architects.



NORTHERN TRUST COMPANY—VIEW LOOKING UP INTO MAIN FLOOR.
Chicago. Frost & Granger, Architects.



NORTHERN TRUST COMPANY—BANKING ROOM ON MAIN FLOOR, LOOKING TOWARD STAIRCASE.
Chicago. Frost & Granger, Architects.



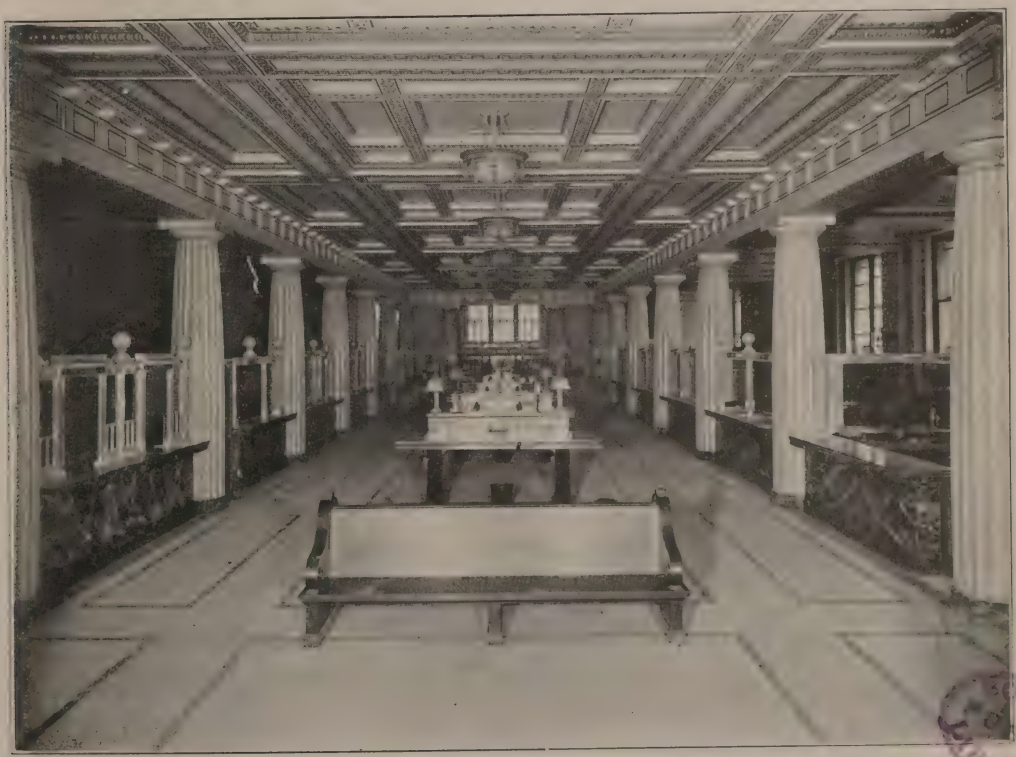
NORTHERN TRUST COMPANY—BANKING ROOM ON MAIN FLOOR, LOOKING TOWARD THE BANKING SPACE.
Chicago. Frost & Granger, Architects.

BOSTON PUBLIC



NORTHERN TRUST COMPANY—BASEMENT CORRIDOR.

Chicago. Frost & Granger, Architects.



NORTHERN TRUST COMPANY—BANKING ROOM IN BASEMENT.

Chicago. Frost & Granger, Architects.



NORTHERN TRUST COMPANY—BANKING ROOM ON SECOND FLOOR.
Chicago. Frost & Granger, Architects.



NORTHERN TRUST COMPANY—SECOND FLOOR CORRIDOR.
Chicago. Frost & Granger, Architects.

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MR. HARTMAN KUHN'S HOUSE—VIEW OF FRONT AND TERRACE.

Devon, Pa. Horace Trumbauer, Architect.



MR. HARTMAN KUHN'S HOUSE—NEARER VIEW OF FRONT.

Devon, Pa. Horace Trumbauer, Architect.



MR. HARTMAN KUHN'S HOUSE—REAR VIEW.

Devon, Pa.

Horace Trumbauer, Architect.



MR. HARTMAN KUHN'S HOUSE—VIEW OF REAR AND SIDE.

Devon, Pa. Horace Trumbauer, Architect.



MR. HARTMAN KUHN'S HOUSE.

MR. HARTMAN KUHN'S STABLES.

Devon, Pa.

Horace Trumbauer, Architect.



FAIENCE WAINSCOT IN THE PALM ROOM OF THE HOTEL DEVON, NEW YORK CITY.
Israels & Harder, Architects; W. P. MacDonald, of Rookwood Co. Staff, collaborating.

Architectural Faience

In a recent number of the Architectural Record, Mr. Herbert Croly has fittingly closed a series of instructive articles upon the development and use of terra cotta by a discussion of the possibilities contained in the successful introduction in manufacture of the processes of coloring the material by means of applied glazes.



FAIENCE LUNETTE—MEETING OF ST. DOMINICK AND ST. FRANCIS.
Loggia St. Paul, Florence. Andrea Della Robbia, Sculptor.

Mr. Croly has left little occasion for touching upon those questions of architectural propriety which are involved in the use of color in connection with external form. Obviously there is no occasion for discussing it as a new element in interior design.

The purpose, therefore, of the present article, so far as it deals with the general question of color in architecture, is to supplement what has already appeared upon the subject by certain considerations growing out of the development of the product known as faience, leaving to professional judgment the assigning to this material of that precise place in the scale of usefulness which its particular qualities and characteristics may suggest.

While faience may in a sense be regarded as belonging to the general classification of work in colored glazed terra cotta, there is a fundamental distinction between it and what is properly described by the latter name, the appreciа-

tion of which has important bearing on the successful development and use of this class of materials. It is one of more immediate moment, especially to intelligent use, than differences of methods in manufacture and technical distinctions. The latter will be noted on a subsequent page, together with mention of the results which have been achieved in faience up to the present time, but for the moment it may properly pursue the general considerations raised in the last article to invite attention to certain other



FAIENCE LUNETTE—ANGEL, CHILD AND TWO SAINTS.
Via Dell'Agnolo, Florence. , Andrea Della Robbia, Sculptor.

questions in the use of colored material of this kind, assuming that professional readers at least are already somewhat familiar with what is produced in it. These relate to the point of view which will get from it the full measure of the qualities of value and decorative interest which it has to offer.

In the last article mention was made of the effort of manufacturers to reduce the cost of colored terra cotta to the limits which will enable it to be widely used in competition with other materials. In other words, to make it commercially practical. This, it is to be inferred, also involves the question of its successful use under and through the prevailing system of competitive bidding between manufacturers, as provided by the alternative form of specification usually employed for that purpose. Unquestionably, however, there must be an almost identical similarity in the effects of color and glaze produced by different manufacturers. Otherwise, it is difficult to see how the prescribed conditions of a design could be realized as to quality of color and texture in the material of one manufacturer as well as in the material of another. This implies a technical standard on some tangible basis.

That up to a certain point the manufacturers of colored terra cotta will realize a certain identity of results is altogether probable. At what point it will stop may be made clear by alluding to the character of results attained in faience and to what causes they owe their origin. Inci-

dentally this will also establish that essential difference between the two materials affecting the point of view from which the consideration of each should be approached.

The most notable thing about faience is not only the much greater range of colors it offers than terra cotta, but the presence in these colors of that indefinable something which we call "quality:" professional readers need no definition of the term as generally used in art; the layman may identify it as that



MADONNA AND CHILD.
National Museum, Florence.
Andrea Della Robbia, Sculptor.



ADORATION.
Verna.
Lucca Della Robbia, Sculptor.

characteristic in which, for instance, unpleasant harshness and crudity are not only avoided, but the effects produced are attended with a positive charm not readily described. Perhaps the word "sympathy" may express it. This quality may be found in colors of the strongest brilliance and carrying power as well as in tints of the subtlest delicacy.

The realization of this "quality" in the work of our American faience manufacturers is attributable mainly to certain circumstances: first, that the present manufacturers began work as artistic potters and craftsmen, having Art as an ideal, and being concerned almost entirely with problems of decorative effect in colored glazes. In some instances, notably that of the Rookwood Pottery, the widest latitude was allowed among the workers for individual artistic expression in the pottery and decorative specialties produced. The records of the Rookwood Co. during the past twenty-five years show over two thousand trials for color and quality of color. This accumulated technical knowledge has been turned into the production of a colored glazed material for architectural use. To the extent that this may illustrate in varying degree the course of development among the present American manufacturers, it may be said that the material they are now offering the architect for the execution of his special designs represents the accumulated experience of a staff of highly trained



THE WEST STREET BUILDING, NEW YORK CITY.

Cass Gilbert, Architect.

This building, now nearing completion, has an exterior of polychrome terra cotta, the main entrance and elevator halls of the ground floor being elaborately finished in Rookwood Faience.

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artist-craftsmen working in close association with scientific technicians who have created their own precedents in the technology of ceramics. To maintain an atmosphere and surroundings which will hold together an organization of this kind, with its interests and ideals, means a sustained policy on the part of the manufacturer of subordinating the aim of commercial profit to that of technical and artistic results. This can hardly be looked for with reason in the business of terra cotta manufacture as a whole. One does not deny the possibility of developing a purely commercial material to a high degree of acceptability for many important applications. On the contrary, several recent examples of what



MAIN ENTRANCE, FIRST GROUP OF BUILDINGS OF THE CARNEGIE TECHNICAL SCHOOLS.
Pittsburgh, Pa. Palmer & Hornbostel, Architects.

An effective application of faience has been made in the use of Grueby Tiles for the colored band over the second story windows.

can be done with it in certain exterior uses testify this, and promise still finer results under the legitimate aim purely of commercial profit. Yet the realization of those splendid possibilities which are suggested by a fully developed colored material under an artistic and technical control assuring the most effective collaboration by the manufacturer, is undoubtedly reserved to the



Detail of Faience Fountain in the Prince George Hotel.
Howard Greenley, Architect.
C. J. Barnhorn, Sculptor.

producer of faience rather than of purely commercial terra cotta. It is particularly true of the more intimate uses involved in interior applications. The qualities of color and surface texture in faience are already leading to its association with the finest marbles and bronze, and in some cases its substitution with entire consistency in richness of effect for these much more costly and less plastic materials.

The foregoing suggests that the manufacturers of a highly developed product of this kind should be regarded as in a somewhat different relation to the architect than that merely of a sub-contractor for a general type of material. Speaking from his own experience in introducing faience to the notice of architects, and venturing it on behalf of manufacturers generally, the writer is glad to acknowledge the appreciation of the fact which has been shown by the members of the architectural profession. Many of them have been quick to realize that no two manufacturers of faience will ever produce results identical in the quality of decorative interest, their products being fundamentally the outcome of artistic impulses, and to that extent involving an individuality in the work of each not characteristic of more strictly commercial materials. Hence the architects in question select some manufacturer for exclusive specification at a price agreed upon after direct negotiation, and, if they prefer, the taking of competitive estimates.

The practical methods of faience manufacture differ from those of glazed terra cotta in certain essential points. Having a common origin as material of a general type, which may be placed, as to its European sources, as far back as the eleventh century. Development during the early Renaissance led finally to two kinds of colored glazed wares that were of wide technical divergence. One of these furnishes what might be called the historical precedent for glazed terra cotta of the kind produced to-day; the other for faience; the use of both by the architects of the period supplying the precedent which the modern architect has for their employment, and which, if it is a limited one, is chiefly so in all probability from the restricted range of technical mastery among the manufacturers of the time. It cannot be doubted that had the scientific knowledge existed among them for the production of glazes having the softness to the eye and touch of the non-reflecting mat surfaces of the faience of to-day, with their richer and more sympathetic qualities of color, the architects and sculptors of the time would have been quick to avail themselves of such a medium, in preference

possibly to the somewhat glassier textures which, even with such masters as the Della Robbias, represented their most advanced technical knowledge. The artistic genius of these men ought not to obscure the fact that a medium superior to anything they enjoyed in this line, in the possibilities it offers, is awaiting the



Wall Fountain in Rookwood Faience: Palm Room of the Prince George Hotel, New York City.
Howard Greenley, Architect.
C. J. Barnhorn and W. P. MacDonald, of Rookwood Co. Staff, Sculptors.

man who can make an equally telling use of it.

From the eleventh to the fourteenth centuries inclusive, colored and glazed terra cotta was used quite extensively in southern Europe for certain minor but artistically important features in the decoration of buildings. It was not commonly employed as a structural material, properly so called. The method of coloring was identical in principle with that now being employed in the manufacture of modern terra cotta. A fine white clay mixed with water was first applied to the surface of a coarse, yellowish clay body. This was afterwards covered with a transparent colored glaze, the intermediate coating of white clay being necessary to preserve the purity of color in the glaze, otherwise adversely affected by the color of the under body, which, under a translucent glaze, takes on a dark muddy quality. The modern method in terra cotta manufacture differs in the elimination of one firing, the earlier work requiring two, but the principle is substantially the same.

If we except the Hispano-Moresque wares as not properly European, it was not until towards the close of the fifteenth century that a method was discovered for producing opaque glazes which could be applied directly upon the body clay without the intervening coating of white clay or "slip," and which opened up a very much wider scope of color and artistic effect. The origin or revival in Europe of this class of wares is commonly attributed to Lucca Della Robbia—certainly the successful development of them to a point where they could be fittingly used for important applications in association with other rich material is due to his efforts. This opaque glazed work came to be known generally as "Faience," and particularly as "Maiolica," in distinction from the "Mezza-Maiolica" or colored glazed terra cotta and pottery produced under the earlier method. The word "Faience" is regarded by the best authorities as originating in a French translation of the name of an Italian town, Faenza, which was noted for its production of the true Maiolica at an early date, the term "Faience" being used to describe its wares, and technically identical types. In France the term was subsequently extended to cover certain "slip" decorated and glazed wares, such as those of Limoges, but in all cases it was asso-

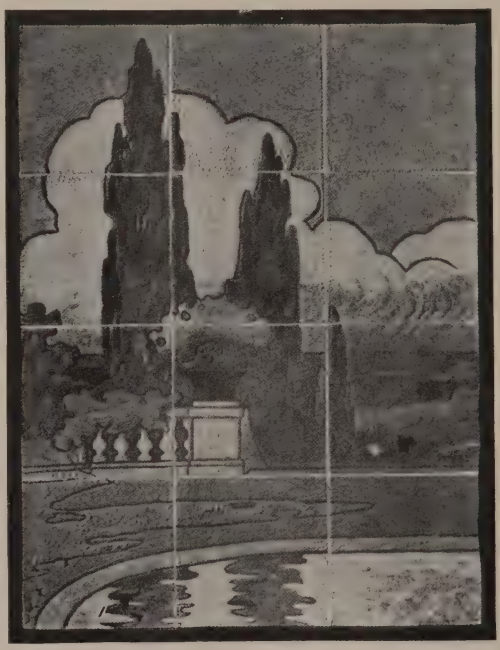
ciated only with a high-class artistic product. The dictionaries limit the term to wares coated with opaque glazes.

In the architectural faience produced in America by such manufacturers as the Rookwood Pottery, Grueby Faience Co. and Hartford Faience Co., the opacity of the glazes is not occasioned by the admixture of tin, as in the Italian maiolica, but by basic elements combined in such proportions as to produce opacity through minute crystallization in the glaze under certain conditions of firing. The surface is technically known as "mat glaze," and the effects are not to be confounded with those of the pottery wares properly known as maiolica or majolica, particularly the modern work which passes under the name, in certain cases quite illegitimately. Dull or mat glazed commercial terra cotta can hardly, from the opacity of its glaze, be included in a classification, the descriptive title of which was evolved to designate a primarily decorative and artistic crafts-product; while of course terra cotta in which the surface has been dulled by sandblast after firing does not fall within the technical definition.

It may be added that there is nothing in the scientific principles of faience manufacture, nor the nature of materials used, to render it less sound than terra cotta in its aspect as a fire and weather resistant, its tensile strength, or other valuable property. During what may be described as the experimental stage in America, the range of colors which could be produced at the very high firing temperatures necessary to realize an equal if not superior durability, was comparatively limited; but it has proved so extensive under further experiment as to make the lower degrees of heat with their soft bodies and glazes unnecessary to realizing an acceptably wide scope.

The range already attained under high fires, includes: pure and variously toned whites, ivory, yellow, gray, brown, green, blue, purple, red, violet and black, in many different shades and qualities of each, there being sometimes four or five of one color. The reds are limited both by difficulty and relatively greater cost, but several shades are now being successfully produced, the most brilliant of which has about the intensity of color in the best red brick. A harsh purplish cast which has hitherto attended any degree of intensity in this color has been finally overcome, and a warm shade attained of most agreeable quality.

The textures associated with these colors are often of marvelous richness and variety. Sometimes they appeal to the sense of certain flower and leaf growths; in other cases the sympathy of the richest leathers; again one may find in certain colors the surface



Decorative Panel in Grueby Faience Tiles, Designed by A. Le Boutillier, of the Grueby Co.

interest of quartz, with its suggestion of crystalline structure, while variations which occur in the firing may incline toward the qualities of old marble or the patina which age gives to the best bronze; always, however, a suggestion merely, associated with qualities peculiar to faience and not found in other material. The slight element of chance with which these are associated involves some handicap in realizing exactly the prescribed conditions of a color scheme, but it contains compensating advantages which a more mechanically exact ren-

dering would not give; and the best appraisal of the balance of advantage and disadvantage is the continued and increasing use of faience by well-known architects, who were the pioneers in an application of material which involves some responsibility.

The use already made throughout the New York subway system, together with that of colored terra cotta for the simpler stations, is understood to be practically assured in the vastly more extensive routes planned, and is at once a testimonial of the satisfactory results attained and of the reasonable cost of each material. Faience is naturally higher priced than colored terra cotta, from various elements of cost, among which are the two firings required as against the one employed for terra cotta; but as offered to-day, it is in no sense a prohibitive priced product, and experiments are constantly pointing out new directions in which the cost may be reduced. It is not probable that faience will ever be extensively used in the general run of cheap building operations, but it is certain to attain a very wide and dignified use in connection with the better class of public buildings and private residences.

Instances of modern use occur with increasing frequency in France and other countries of continental Europe, while in England it has attained considerable popularity, and has been employed liberally for the decoration of hotels, banks, and other public buildings of the first importance. The English faience, however, while in some cases of superb technical perfection in body and glaze, often shows the candy-like slickness of texture and uninteresting qualities of color that are apt to be associated with a ware which is the product of perfected technical formulas uninspired by art.

In America fewer applications of equally extensive scale have been made as yet. Owing to the production of faience in this country originating among manufacturers of decorative pottery, the natural development inclined at first toward the more concentrated and special uses involved in private house interiors: some of the most effective illustrations of its finer qualities as material, if not the great majority of them, are therefore not generally available for public inspection. Within the last few years, however, following on the growth of business which has led the manufacturers to increase their facilities by adding to their pottery equipment complete new plants organized entirely for architectural work, there have been a number of applications to public buildings of more or less consequence. Among the examples which may be mentioned under this head are the following: In New York City, twenty-three Subway stations of the first class in the Borough of Manhattan, and one in Brooklyn, from the designs of Heins & La Farge, Architects; the Forty-first Precinct Police Station, Mosholu Parkway, Stoughton & Stoughton, Architects; the Lion House, Zoological Gardens, Bronx Park, Heins & La Farge, Architects; the Hotel Devon, West Fifty-fifth Street, Israels & Harder, Architects; the Prince George Hotel, East Twenty-eighth Street, Howard Greenley, Architect; the Club House for the Ancient Order of Hibernians, H. Van Buren Magonigle, Architect; the new Flatbush Avenue Terminal, Long Island R. R., Brooklyn, J. Davies, Engineer, H. F. Saxelbye, Architect; and the interior of the West Street Building, Cass Gilbert, Architect. Notable instances elsewhere occur in the Carnegie Technical Schools, Pittsburgh, Palmer & Hornbostel, Architects; the new Pennsylvania Railroad depot at Allegheny, Pa., Price & McLanahan, Architects; St. Paul's Church, Rochester, Heins & La Farge, Architects; Trinity Church, Columbus, F. L. Packard, Architect; and the new Sinton Hotel, Cincinnati, and the Seelbach Hotel, Louisville, both by F. M. Andrews, Architect, which will involve an extensive use of faience of highly decorative character for mural ornamentation. In the form of plain wall tile, faience has been used by Messrs. Carrère & Hastings for the stables of Mr. Murray Guggenheim, at Norwood Park, Elberon, N. J.; by Cram, Goodhue & Ferguson, for the power station in the new

U. S. Military Academy buildings at West Point; by Mr. Geo. B. Post for the College of the City of New York's new buildings, and by other well-known architects in applications of less importance.

On the whole, it may be said that the material has met the approval of the profession as a contribution of value and distinct merit in the range of appropriate mediums which are offered the architect to-day for the realization of his ideas; and that the caution which at first attended its use by American architects gives weight to the indorsement it has finally received.

Sturgis Laurence.



BRONZE QUADRIGA TO BE PLACED ON THE NEW STATE CAPITOL, ST. PAUL, MINN.

Daniel C. French, E. C. Potter, } Sculptors.

Cass Gilbert, Architect of the Building.

(Photo. by courtesy of Jno. Williams, Inc.)

NOTES & COMMENTS

CONCRETE COUNTRY HOUSES

The Atlas Portland Cement Company has recently published a large portfolio, containing illustrations of some ninety or more country houses, in which various kinds of cement construction have been used. This is the largest and the best collection which has yet been made of the photographs of houses coming under this head; and it affords an excellent opportunity to estimate the progress which the design of cement building has been making. Architects continue to design buildings in which the peculiar advantages of cement as a material are neglected. But some progress has been made, and the present publication illustrates many extremely attractive houses situated in all parts of the country. People who are interested in the subject are recommended to secure this publication, which can be purchased from the Atlas Company for a dollar. It may be remarked in passing, however, that the title of the portfolio—"Concrete Country Residences"—covers all forms of construction, in which cement plays an important part. Ordinarily, a concrete country house would mean a house whose walls consisted either of solid reinforced concrete or of concrete blocks; but by far the largest proportion of the houses illustrated in this portfolio are of frame construction, with a coating of stucco plastered on wire lath. This method of construction is, of course, economical and has many aesthetic advantages; but it has none of the durability or the fireproof qualities of the reinforced concrete building. Attention should be called particularly, however, to the following residences, which are concrete residences in the strictest sense: The house of M. H. Knight, at Boston; that of J. R. Steers, at Mechanicsburg, Ohio; two houses at Fort Thomas, Ky.; the dwelling of Robt. Anderson, at Cincinnati, Ohio, and finally that of Mr. S. Hotchkiss, at Lestershire, N. Y.

ECONOMY IN TENEMENTS

The section of the magazine that was thus devoted to "The Tenement Builders of To-Day—A Survey of Progress in the Construction of Multiple Dwellings in the Larger Cities"—was edited by Emily W. Dinwiddie, who is secretary of the Tenement House Committee of the New York Charity Organization Society. Her contributors included, among others, Grosvenor Atterbury, who discussed the Phipps houses in an illustrated article; Ernest Flagg, whose subject was "The Best Method of Tenement Construction"; Charles B. Ball, who, as secretary of the City Homes Association, described "The New Tenement in Chicago," and F. Herbert Stead, who told of the twenty-two acres "In Midmost London" cleared and rebuilt by the Church of England. Mr. Flagg begins his article with these dicta: "No method of construction is good if it is not practical. To be practical, the cost must not be so great as to preclude a fair return on the investment." He adds that the chief benefit which should accrue from the work of the builders of model tenements is its influence in raising the standard of tenement construction by ordinary builders. "If, therefore, the model houses are so extravagantly planned that they cannot pay the usual return on the investment, they have failed at a vital point, * * * for they will not be copied by the man who is in the business to make a living." He thinks that not to give more comfort and less return, but more comfort and the same return, should be the goal —and this he believes is practicable. "It is not difficult to beat the ordinary builder of tenements on his own ground; for the most part his methods are crude, his capital limited, his plan uneconomical and his management bad." "The best method of tenement construction" is, in Mr. Flagg's opinion, fireproofing. He finds the difference between the cost of the fireproof and the non-fireproof house not more than twelve or fifteen per cent., the law requiring certain parts to

be fireproof anyway, and this is largely offset by the economy in space—through thinner partitions, etc.—of which fireproof construction permits, while the building thus constructed needs fewer repairs, lasts longer, may be made vermin proof, and the partitions, though thinner, are more sound-resisting. Indeed, it seems to him a question whether the fireproof house is not now the more economical of the two, even in New York, where the present building law is unjust in some of the restrictions put on fireproof structures.

HOUSING THE POOR

A recent magazine number of "Charities" was mainly devoted to tenement building. While the point of view was the philanthropic rather than the architectural, yet in the practical discussions of various phases of the tenement problem it was inevitable that the architectural aspect should have much consideration; and as far as this relates to interior planning it was exhaustively debated. Editorial discussion noted that "the trend in America," in attempt to obtain better housing conditions for tenement dwellers, "is now to expend the greatest effort upon securing legislative restriction and municipal or state supervision," this affecting, not new tenements only, but to some extent the old buildings, which are raised to a better sanitary condition. As the restrictions of New York State's new law are not yet ideal, it is held that an important contribution of such an undertaking as that of the Phipps houses is its demonstration of "ways of profitable construction in line with a rising standard." In Germany, as another writer points out, the problem is better understood than with us, for there is a more careful gathering of statistics and a stricter public control. The reforms there are grouped under four general heads—first, the housing of public officers and workmen in structures built or contracted for by the municipality; second, the encouragement and assistance of building associations; third, the assurance of cheap and rapid transportation to the suburbs; and, fourth, the preparation by the town council of a street and building plan of the land around the city. In some cases this is actually acquired by the town, which then builds on it or lets it out to companies; and in any case a purchaser knows what is to be the future character of the environment of his plot. In Paris the law requires fourteen cubic feet of space for each person in a lodging. This is a severer requirement than in New York, and Paris is also in advance of us as regards window area and total minimum area of rooms. In the matter of toilet regulations New York is ahead of Paris, though possibly this gain is offset by the frequency and excellence in Paris of the public comfort stations. Any check that the law's restrictions might impose on building is balanced there by the aid given by the government to building companies in the form of credit, long-time loans, low interest and easy security.

NATIONAL STUDY OF PARKS

For some years, but lately with increasing earnestness, G. A. Parker, of Hartford, has been advocating the national government's systematic study of municipal park systems. Mr. Parker is superintendent of the Hartford parks, but he is so much more than that—such a park census bureau in himself, with a collection of classified and indexed park data not to be equalled anywhere—that park authorities scarcely mention his official position. And he is more than a statistician, for withal he is a man of singularly fine and right sentiment. So it happens that it means something when one says that G. A. Parker, of Hartford, is advocating an innovation. Returning to his theme at the recent convention of the American Association of Park Superintendents, he read a paper which explained why he thinks municipal parks a proper subject of study by the national government. Mr. Parker said: "The indications are that within a generation or so about one-half of the nation's children will be born and brought up under urban conditions and that the city must depend upon its own children to an ever increasing extent to manage its affairs, it becoming impossible for the rural districts to furnish a sufficient number of young men and women for the city's needs, as in the past. It is therefore imperative that city conditions be made such that children city born and bred may have such environments as will enable them to grow into healthy and vigorous men and women, physically, mentally, morally and spiritually, and the function which is to have a most important bearing on this work is the park. The need is great, the result to be accomplished worthy of the nation's best effort, and conditions such that nothing short of a national work can bring it about." Turning to statistics, Mr. Parker noted that $12,000,000 is now annually expended in park work, and the government's guidance might, he believed,

double the good done by the money expended. The government is already, through the Census Bureau, issuing a quantity of valuable statistics relating to parks. These assemble the simpler facts, such as acreage, ownership, location, and so on. Mr. Parker wants this work supplemented by investigations showing the popular use of parks, the nature of the enjoyment or recreation they offer, their influence, and from such investigations the preparation of comparative studies.

STREET PLAN OF AN IDEAL TOWN

A colonizing scheme, fairly typical in all its vagaries, for establishing a new and ideal town in the far Northwest, makes appeal for consideration on the unexpected ground of its street plan. The descriptive pamphlet that has been sent out shows that the promoter, a Western contractor, has thought and studied on the physical structure of cities; there are many quotations from the authorities on this subject, and the plan evolved and illustrated is a thoroughly interesting one. It is not a little significant that the author of the design, with its many diagonal thoroughfares, its inner and outer circling streets, its focal points at railroad station and civic center, should say that only a few years ago, "when I made my first sketch of an ideal city, I followed the American system of laying out the blocks at right angles." He now realizes that "the rectangular plan has serious defects," and the event may be taken as evidence of the advance of public knowledge as to good city planning. "In my ideal plan," says the promoter in his pamphlet, "eight streets radiate from the center, with the rectangular system as a base, and the long angles and irregular sized blocks give advantageous building sites which do away with the dreary uniformity of the average American cities. They give us one style and Carlsruhe, Germany, gives us another, for she has thirty-two streets radiating from the palace. Neither plan is desirable alone; a combination of the two makes a success, like Washington. But there is yet another improvement to be made, and this time Vienna furnishes us with an illustration of the truth that no land has a monopoly of fine city building. * * * It is an easy matter to arrange for the beauty that pays, even in a small town, if it is done in good time. Half a dozen churches grouped around a square and well set off with architectural and landscape art would furnish a sight worth going miles to see." So the little book rambles on, with good and foolish ideals strangely mixed. But when one thinks of the "garden cities" in England, that even in Dowie's Zion the haphazard city plan was scorned, and that promoters arrange to-day for the beauty of the town they would build as well as for ideal social and industrial conditions, and similarly extol it, one begins to realize that "the voice crying in the wilderness" is no longer a correct description of the prophet of better planned cities. He has been heard —a matter of moment to architects.

A BILLBOARD VICTORY

Honolulu newspapers contain an account of a billboard victory by the local improvement club. The story is significant of the wide reach of the advertisement problem and of its identity in character. It is also suggestive of a simple way of handling it. On the Waikiki Road, which leads past the two large shore hotels and to the park and is as yet Honolulu's only boulevard, there was a big Heinz pickle sign. The improvement club notified the local advertising company's agent that it was particularly opposed to signs on this main tourist and scenic road and courteously asked that it be removed. The agent replied that with him the matter was a business proposition only; that the tourist use of the boulevard gave to it a special value for advertising purposes, but that, on the other hand, he recognized—still from a business standpoint—the value of pleasing people, and would take up the matter with the Heinz Company. Several letters, reaching no further than the advertising department, failed to elicit a satisfactory response. The agent then wrote personally to Mr. Heinz, explaining the circumstances. Mr. Heinz at once ordered the sign's removal, and asked the agent publicly to express his regret that it had been offensively placed. Further, he said his company would bear the expense of removal, which was a considerable item, as the sign had to be sawed into sections and then entirely repainted. Another large sign, on a residential street, was removed by the agent, the woman who complained of it paying the expenses of removal; and the agent, seeing the drift of things, removed a third objectionable sign, the last on Waikiki Road, at his own expense. All this being reported, the improvement society gave him a vote of thanks. Now, nobody can believe that the advertising company, or the companies they advertised, lost anything locally by this action; and certainly the Heinz sign is gain-

ing through its removal a publicity it never would have had without a change. This very note is one evidence of that. Happily, the occasion is not the first on which Mr. Heinz—notable offenders as his advertisers are—has shown a deference to justifiable public opinion when personally and courteously appealed to.



THE NEW BUILDING OF THE NEW YORK HISTORICAL SOCIETY.
77th Street and Central Park West, New York. York & Sawyer, Architects.

HOUSING NEW YORK CITY'S PUBLIC SERVANTS

The recent announcement that bids were being received for the erection of the new police headquarters building, calls to mind one of the most wretchedly housed of the city departments. Did it ever occur to you as a citizen of this vast city, to think of the almost endless number of gigantic private enterprises conducted in its confines? Did you ever stop to calculate the number of large commercial buildings that have been built in the City of New York in the last decade? The number runs into the hundreds, involving many millions of dollars, and speaks loudly of business prosperity. And this enormous growth has made itself felt especially in the increased volume of public business, implying increased facilities both in personnel and in space.

And what has the municipal government done to measure up to these new requirements? The answer to this question can be answered in a general way by any intelligent observer in a half hour's walk from South Ferry to City Hall. He will observe that the city's chief executive still holds

forth in the same old building that served the purpose nearly a century ago. The rumor that New York is to have a new city hall has been sprung on the public so many times that they regard it as a joke. Not that no steps have ever been taken in the proper direction, for several competitions have been held for the purpose, but these attempts have always reached a certain stage and then failed, sometimes because of a change of administration, sometimes for other reasons. The fact remains that the old building is still with us. But the old city hall has at least a merit even if it is past serving its purpose. It is one of our show buildings, and even if a successor should at some future time rob it of its function, New Yorkers would be very sorry to see it done away with.

Then there is the old general post office across the park which is not ony inadequate for its purpose, but a disgrace to the metropolis of America, being offensive to look at and unsanitary to work in. But while we condemn we should also be just, and show the good with the bad, for there are within a short distance of City Hall Park two splendid new municipal buildings, the Hall of Records, on Chambers Street, and a short distance down Broadway the new Custom House. These two buildings are, however, exceptions, and only a drop in the bucket toward the decent housing of the city's servants, who certainly deserve better accommodations than they now have.

Just traverse the vast territory of the Greater City and look into the various police stations and branch post offices. The police stations are particularly bad from a sanitary point of view, many of them violating almost every requirement of the sanitary code. And these places are continually being renovated, patched up and repaired. That the police department takes little pride in its quarters is the conclusion that one must arrive at when looking into some of these buildings. One might even remark that considering the standard of cleanliness and sanitary order maintained, the present buildings are amply good enough for the purpose. Such conditions certainly cannot make for the elevation of the men that must use them.

The branch post offices are little better, and, if they are better at all, it is only because they are more exposed to observation. Housed in buildings for which the city must pay high rentals, these places often occupy space poorly adapted for public business, and are often dirty and poorly ventilated. The branch post office problem for New York has yet to be successfully solved. Land values have reached such a point in business and congested parts of the city that the chief concern in such localities is to get as much into as little space as it can possibly be made to contain. In view of these facts it would seem that the European idea of having the whole establishment, with all its appurtenances, stables, quarters for clerks, etc., all incorporated in one scheme, would be unavailable for us, except in the rural parts of the city. It seems a pity, though, that such an obviously good solution of the problem should be denied us for financial reasons, but who will deny that with our customary amount of resource we will yet arrive at an equally good solution?

COLUMBIA UNIVERSITY ARCHITECTURAL DEPARTMENT'S 25TH ANNIVERSARY DINNER

On November 17 the Society of Columbia University Architects gave in the library of the University a dinner to commemorate the twenty-fifth anniversary of the founding of the Department of Architecture of Columbia College. A reception was held in the Avery Architectural Library and dinner was served in the great room of the Law Library, both rooms being effectively decorated for the occasion. Wm. R. Ware, Professor Emeritus of the Department of Architecture, the guest of honor, was unable to attend on account of sickness in his family. Mr. D. Everett Waid, President of the Society of Columbia University Architects, was the toastmaster. The first speaker introduced was Seth Low, ex-President of the University. Mr. Low gave an interesting account of the present buildings on Morningside Heights; he told how the late Mr. R. M. Hunt and Messrs. C. C. Haight and Charles F. McKim had been invited to offer suggestions for the layout of the buildings, and how Mr. McKim's scheme had been accepted, embodying, however, the good points incorporated in the schemes of the other two. The second speaker was President Butler, who expressed a kindly appreciation of Mr. Ware's work and an equally genuine recognition of the present *regime*. Sir Purdon Clarke, Director of the Metropolitan Museum of Art, followed with a very interesting comparison between the English and American systems of architectural education. He remarked that the occasion would be impossible in England because there the aspiring architects still receive their training by individual instruction under some master, and there exists in consequence no bond of sympathy among the

students. On the whole, the comparison was decidedly to the advantage of the American system. The next speaker was Dr. Canfield, Librarian of the University, who outlined the history of the present library and concluded with an appreciation of Mr. and Mrs. Avery and an account of their work for the good of architecture in New York City.

Professor Hamlin made the last speech in a very informal manner, which was, indeed, more in the nature of a pleasant talk. It was evident that, while the company was not boisterous, the evening was thoroughly enjoyed by everyone present, and the function could hardly have been held in more appropriate surroundings.

PARKS AS MONEY MAKERS

To the statistics showing the value of park lands to a city an interesting addition has been made. It is in a communication sent to each member of the General Council of Louisville by Gen. John B. Castleman, who is president of the Park Board. He quotes a former city assessor as stating some years ago, after careful investigation, that park development had added $20,000,000 to the taxable values. Accepting the present rate of assessment ($1.86), General Castleman finds that the income to the city from this increase is $372,000 a year. In ten years it comes to $3,720,000, and in the same period the total outlay for parks was $2,070,625.83. Thus the municipality realized, in addition to the property it received and the pleasure given to citizens, a net cash profit over all expenditures of $1,600,000—a big thing for a city the size of Louisville to get in ten years, and a result that may properly encourage park expenditures elsewhere.

THIRTEENTH ANNUAL ARCHITECTURAL EXHIBITION OF THE T-SQUARE CLUB

The great national interest attaching annually to the exhibition of paintings held by the Pennsylvania Academy of Fine Arts, created by the fact that the Academy, as the oldest institution of its kind in the country, has a prestige in the artistic community which is second to none, has made it possible for the T-Square Club, in holding its exhibitions in the galleries of the Academy and under its auspices, to arouse in the architectural profession and in the allied arts and trades an interest in the exhibition of this year which renders it perhaps the greatest of its kind ever held in this country.

The management of the T-Square Club has endeavored to give to the exhibition an educational character in the broadest sense of the term. They hope that it will not only attract the profession and those more intimately connected with it, but that it may interest the public generally, to whom the subject matter of the exhibition is perhaps not directly attractive; and their hopes should be realized, for the committee has been very successful in obtaining exhibits bearing on matters of much interest to the public in many different ways. To still further advance their end, the Academy and the T-Square Club have asked the National Society of Mural Painters, National Sculpture Society and the American Society of Landscape Architects to associate themselves in the exhibition, with a view to showing the executed work of the allied arts in connection with the drawings of the architects.

The exhibition comes at a time peculiarly propitious in two ways—first, the great interest which has been aroused the country over in the movement for municipal improvements, both in the way of the opening of great boulevards and the beautifying of these with monumental structures; second, because at this time of great prosperity vast sums are being expended commercially and in the improvement of transit facilities and the housing of government and municipal offices.

In the handling of the exhibition in the galleries the management again has been most fortunate. The grouping is happily such that a visitor may find readily the exhibit bearing on his particular subject.

To the right of the staircase hall are many of the drawings submitted in the recent competition for the Peace Palace of The Hague, held under the auspices of the Carnegie Foundation, together with an interesting collection of photographs of all prize winners in this competition. In this connection the magnificent draftsmanship displayed in the drawings of Messrs. Carrère and Hastings should be particularly noticed. The Shelby Court House, by Messrs. Hale and Rogers; the Wisconsin State Capitol, by Messrs. Peabody and Stearns, and the Washington National Museum, by Messrs. Hornblower and Marshall, are also of great interest.

On the left, at the head of the staircase, the wall space has been devoted to the general subject of municipal improvements, notably to those of Washington, D. C., of the drawings for which there is a very complete collection.

In the three rooms on the east front are grouped three categories of exhibits of very different characters; first, drawings in black.

and white of executed work, with working drawings for the same, and in many cases accompanied by photographs showing the work completed.

The drawings of Messrs. McKim, Mead & White of the great New York Terminal of the Pennsylvania Railroad are shown for the first time in this exhibition, and are most interesting. Mr. Henry Hornbostel shows some of his drawings of the Carnegie Institute of Pittsburg, which, as examples of architectural study and draftsmanship, are second to none; while the ecclesiastical work of Messrs. Cram, Goodhue & Ferguson is well worthy of note. Messrs. Carrère & Hastings' delightful drawings for the New National Theatre, in New York, which is being put up by the patrons of art in that city for the benefit of the drama of our country, will be of interest to all. Messrs. D. H. Burnham & Co.'s original sketches for the beautifying of San Francisco, which were made by Mr. Edward Bennett before the earthquake and fire, and from which he made the final drawings, which were destroyed in the fire, will prove of interest to all familiar with the San Francisco city plan and the development of this great improvement.

The central room contains a collection of photographs covering executed work of every sort—from the National Park Bank, of Mr. Donn Barber, and the Indianapolis Postoffice, of Messrs. Rankin, Kellogg & Crane, through the whole gamut of architectural achievement, including country houses of all sizes, university work and many photographs of the treatment of gardens, avenues and gateways in this country and abroad. As matters of particular interest, we should note a photograph of the banking room of the Rochester Trust Company, by Messrs. York & Sawyer; the exterior of Mr. J. P. Morgan's private museum in New York, by Messrs. McKim, Mead & White; a charming country house, by Mr. George Bispham Page; the United States Court House and Postoffice at Marble Head, by Messrs. Peters & Rice, and some delightful views of the buildings at Bryn Mawr College, by Messrs. Cope & Stewardson. We should not leave this room without noting the model of the McKinley Monument, by Messrs. Lord & Hewlett, together with photographs of the executed work and the statues, by Mr. J. Massey Rhind, for the Indianapolis Postoffice.

The third room contains a collection of sketches and photographs of foreign travel, which, in their spontaneity of execution, for the water colors, and in their remarkable selection of subject matter and composition for the photographs, will prove an inspiration to all who see them.

The drawings in color for work executed or in the course of construction in the gallery following the Washington drawings by Messrs. Charles A. Platt, Wilson Eyre, Brockie and Hastings, Benjamin W. Morris, Cass Gilbert, and many others, are all of interest as showing the care which the American architect gives to the study of his work and the admirable talent of many of them in presenting their conceptions in a manner intelligible to their clients.

There is a whole room devoted to the work of great French architects. M. Chedanne, architect to the Ministry of Foreign Affairs, shows his remarkable drawings made in connection with his study of the Pantheon at Rome. It was he who upset all the theories concerning the construction of this great dome and who established beyond all peradventure that his premises were correct. This set of drawings puts before the observer clearly the result of M. Chedanne's investigations, and, measured by their service to the cause of Roman archaeology, are without question the most interesting drawings ever shown in this country, constituting unquestionably the clue of the exhibition. His other drawings of the restoration of a Roman temple, of the decorations of a Roman house and of his great "Champs Elysée Hotel," in Paris, are other matters of great interest in their several ways.

M. Duquesne shows a set of two drawings, being a comparative study of two Italian municipal palaces, made while he was a resident of the Academy of France at Rome, which, as samples of draftsmanship and in their beauty of coloring, ably display his talent.

M. Lapeyrer shows a series of five drawings of his scheme for a great entrance boulevard to the city of Bordeaux, which are of great interest, as showing that even the great cities of Europe have something left to do in the way of possible improvements and are undertaking them.

The large hall at the Academy is filled with the exhibits of the National Society of Mural Painters, who are much to be congratulated upon the scope of their exhibition. Up to the last moment it was hoped that the mural decorations for the Pennsylvania State Capitol would be available, but the authorities at Harrisburg finally decided that they could not leave the building. There is a whole wall given to the work of Mr. John LaFarge, which is made up of the studies for and of the photographs of completed work. Mr. E. H. Blashfield has another panel, and Mr.

William B. Van Ingen another. The center of the room is occupied by a painting for a ceiling by Mr. Karl Newmann, of great brilliancy of color, while the room is full of charming panels and studies which speak highly for the great advances that are being made in the country in work of this character.

The central rotunda and the gallery adjoining contains the exhibit of the National Sculpture Society, with four great groups from the New York Customs House, by Mr. French; a tombstone, by Mr. Calder; a model of the doorway of the chapel at Annapolis, by Mr. Ernest Flagg, and a model of the Girard Trust Company's new building for the corner of Broad and Chestnut streets, Philadelphia, by Messrs. McKim, Mead & White and Mr. Evans.

The rooms are made more attractive by many panels set in charming vases exhibited by Messrs. Henry A. Dreer, Inc.; H. W. Moon Company and the Andora Nurseries; while there are certain other exhibits of cabinetwork by Mr. John Barber, lighting fixtures by the Sterling Bronze Company, and other work by the decorative trades, which lend an added interest to the exhibition.

It is to be regretted, in fact, that there are not more exhibits of this character from the trades at large, as they add greatly to the practical value of an exhibition of this educational nature, as tending to put before the public the execution of the designs made by the artists. Such work as there is, however, is of a high character, and gives promise of great things in store for the American workers in these lines.

The end of the gallery and the end room are devoted to architectural school work, properly so called; the designs in plan and elevation for all manner of problems which have been proposed and studied in the various schools of the country during the past year. It is an exhibit wholly creditable to the students whose work is shown, and will be very interesting to their fellows and to the public, as showing what is done in the schools of architecture in this country to-day. Opportunities for study of this nature were not to be found here ten years ago. It is owing to the influence of the Ecole des Beaux Arts in Paris and many of our younger architects who have studied abroad and brought home with them the modern ideas of instruction in architecture in vogue in France that these courses are to be found to-day. It is primarily to the initiative of the Beaux Arts Society of New York and to Frenchmen like Despradelles, of the Boston Institute of Technology; Cret, of the University of Pennsylvania, and to Prevost Hebrard and to the clear-sighted policy of the architectural departments of our colleges that the country is indebted for the great progress made in architectural instruction.

On the whole, the societies connected with this exhibition are greatly to be congratulated upon the result obtained. It is an effort to make it possible for the public to be enlightened on many subjects which have only recently become of importance to us, and it is to be greatly hoped that the public will take advantage of this opportunity to see what the architects and artists of the country are doing for the country.

CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS

The next convention of the American Institute of Architects, to be held in Washington City January 7, 8 and 9, 1907, will commemorate the fiftieth anniversary of the Institute, founded in 1857. It is proposed to make this a notable meeting. A bronze memorial tablet, containing the names of the founders of the Institute, will be unveiled in the Octagon, commemorating the occasion. During this meeting the Institute will inaugurate the custom of presenting a gold medal for distinguished merit in architecture. The first medal will be presented to Sir Aston Webb, the architect of the Victoria Memorial, London, who received the gold medal of the Royal Institute of British Architects and knighthood during the past year. This meeting will also be the occasion of a formal banquet, at which will gather those distinguished in the fine arts, prominent government officials, representatives of educational institutions and men of literary fame. As ceremonial and social events will occupy the time of this meeting, no formal papers will be read, but the routine business and commemorative exercises will occupy the time of the delegates.

A Chance for Every Specification Room

What follows is especially addressed to those whose duties in architects' and builders' offices necessitate their making use of catalogues.

Sit down for a moment and think!

Bring to your mind catalogues big and little—the large volume of Jones & Co., the smaller catalogue of Brown & Co., the mere pamphlet of Robinson & Co. Whenever you have turned to these catalogues have you not done so for a definite purpose? Usually you were in search of some specific piece of information—size, price, weight, name and address, or something else of the same kind. Certainly you did not turn to these books or booklets with any intent of "doing a little reading." Probably you were in a hurry. You wanted to get at a fact. You needed a book that would answer your question in precisely the same sort of way the telephone book gives you the telephone number of the subscriber you are seeking.

Now, the question we want you to decide is this: Does the ordinary average catalogue sent to you by building material firms serve you as well as it might?

Is it arranged on the most logical plan? Does it assist you in the task of reference? Does it render up to you in a clear, unmistakable manner the information you want?

Or, on the other hand, is it put together and arranged in a comparatively imperfect way? Is it clogged with "reading matter" and "salesmen's talk"? Is it deficient in the specific information that would really be of value to you in the making of specifications and the development of plans?

If you were going through the catalogue and adjusting it for your own purposes, how much of the reading matter would you exclude; how much new material would you add? What would be the exact nature of these omissions and additions?

Many of these catalogues contain illustrations, some of them very pretty pictures. You get views of the Congressional Library, State Houses, post offices, residences of prominent persons, etc., wherein the manufactured goods are installed. Are these pictures of any value to you? Would you, for *your* purposes, exchange them for really good working diagrams and technical drawings?

Some catalogues are little and some very big. Which is the better? Is there any rational size?

Then again, as you know, the makers of catalogues expend an enormous sum of money on what is called "artistic" covers, heavy paper, stamped and gilded. A lot of money is also spent upon fancy colored inks and delicately tinted papers, novelties of almost effeminate character. Do these serve any purpose in the specification room? Would this expenditure be more wisely made if devoted to services of direct utility?

You know, of course, that millions upon millions are spent annually in the United States on catalogues. The cost of these catalogues is, of course, charged against the goods or the services which the architect, the builder or the owner subsequently buys. Literally thousands of these catalogues, big and little, are sent out annually in the hope that they will be maintained and used in specification rooms. You also know, of course, that only a very small proportion really ever get into service. A great many are thrown into the waste-paper basket shortly after the mail car-

rier has delivered them. A great many more are put aside with the idea that they may "come in handy" some time; which they rarely do. After gathering dust for a time and obstructing shelves, they are thrown away. A small minority are retained. But even this small minority is, after all, quite numerous. They are put into boxes or arranged in files or cabinets.

Whichever plan is adopted, it requires labor and entails cost. Moreover, is it really effective? Don't the catalogues get out of place? Don't they become old and obsolete? Doesn't it really happen that the one you want is never on hand at the essential moment?

Now, can you not think of a better way of arranging and handling this trade information?

For instance, would anything, in your judgment, be gained by making all catalogues of the same standard size; by printing them all in the same type; by arranging them all logically one following the other in alphabetical order, by omitting from the reading matter all advertising and "hot air"; by adding to the reading matter all the facts and nothing but the facts that are *required in the specification room;* by then binding all these catalogues together in one volume or a series of volumes, and adding to the whole a complete cross index so that you could find in a moment anything you were looking for.

Would an arrangement of that kind be an improvement on the existing state of affairs? If not, what can you suggest?

If you will sit down and write out your ideas in clear English, telling us:

(1) What the catalogue, as you see it, should contain.

(2) How it should be arranged, printed and distributed.

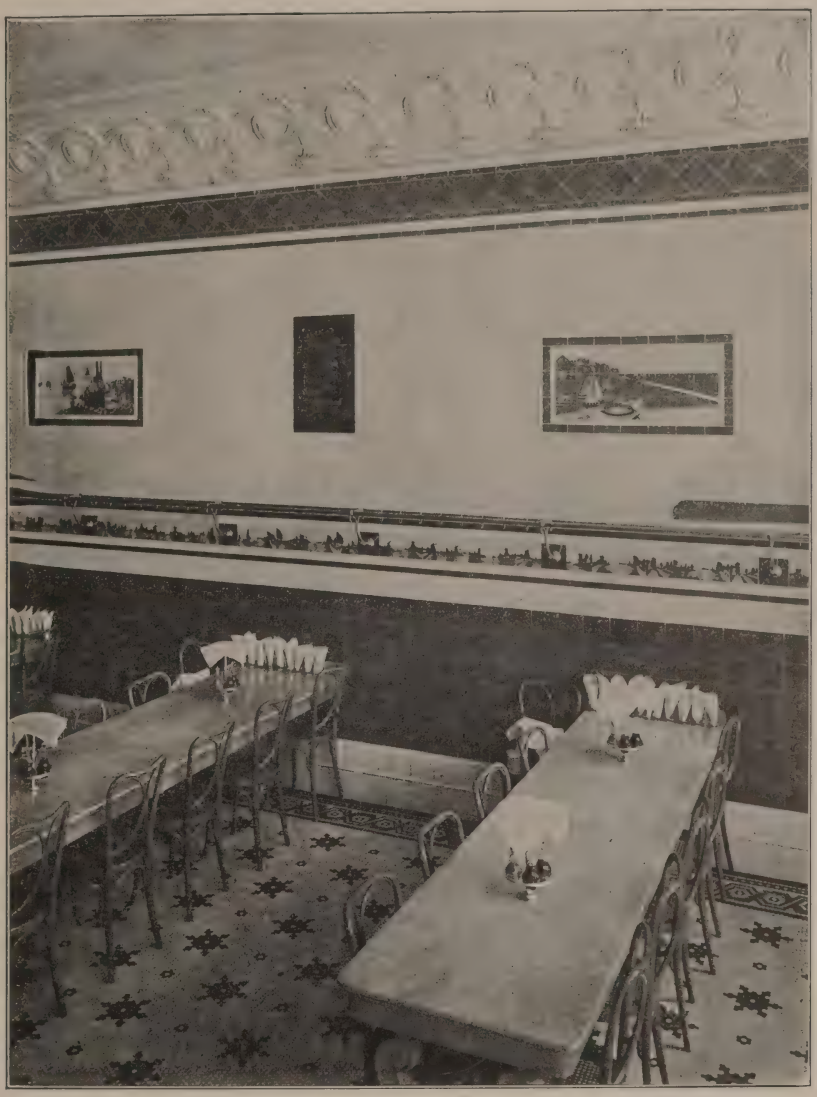
And after having typewritten the same, send it to "SWEET'S" at the address below, you will have a thoroughly fair chance to win one of the four prizes mentioned—prizes which will be awarded by an impartial judge whose name will be announced later.

"SWEET'S" will give a first prize of $100.00, a second prize of $75.00, a third prize of $50.00, and a fourth prize of $25.00to the four best papers that shall be sent in to it dealing with the catalogue. It is understood that the manuscripts sent to "SWEET'S" shall in all cases become the property of the publishers, and they shall have the right of printing any or all.

It is to be understood that fine writing will not count in the award, which will be largely based upon the completeness of the analysis and criticism of the catalogue contained in the paper submitted.

The publishers of "SWEET'S" want to find out what it is *the specification room* most desires in a catalogue.

All manuscripts must be delivered on or before March the 1st, 1907, to the headquarters of "SWEET'S," No. 11-13 E. 24th St., New York City.



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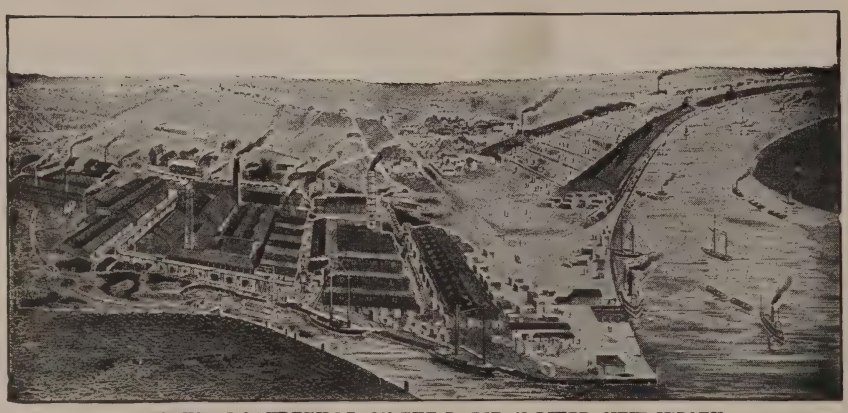
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THE ARCHITECTURAL RECORD

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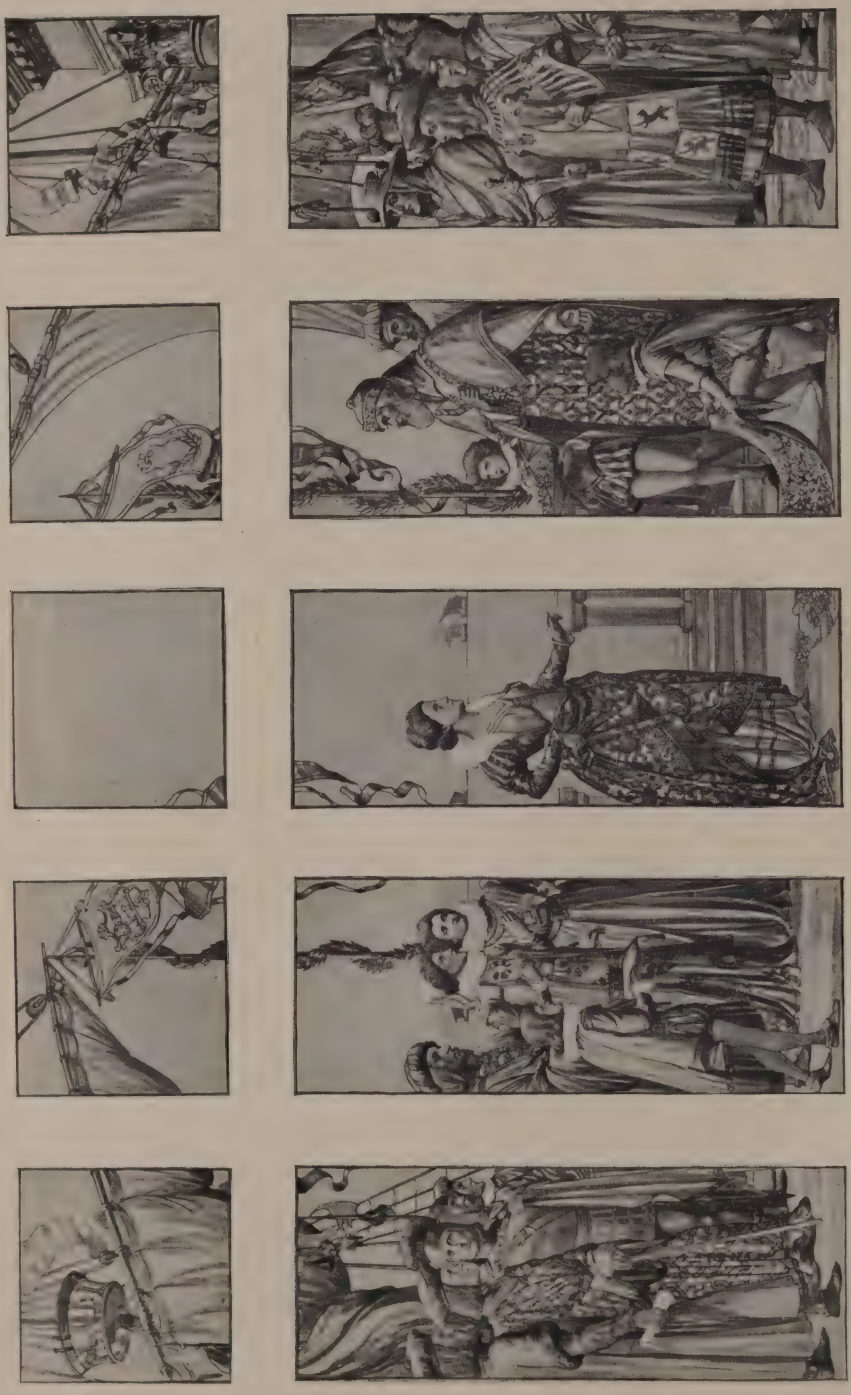


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A STAIRCASE WINDOW. CATHERINE CORNARO SURRENDERING THE SOVEREIGNTY OF CYPRUS TO THE VENETIAN REPUBLIC. RESIDENCE OF LAWRENCE C. PHIPPS, PITTSBURG, PA.

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JOHN ROBINSON BLESSING THE PILGRIMS ON THEIR DEPARTURE FROM DELFT HAVEN.
FIRST CHURCH, PLYMOUTH, MASS.

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CHARITY. AMERICAN MOSAIC WINDOW DESIGNED FOR A CHURCH IN CALIFORNIA

The
Architectural Record

Vol. XXI FEBRUARY, 1907 No. 2

St. Paul's Chapel

In dealing with ancient church architecture adapted to modern uses there is, I think, no style so promising as the Byzantine, the Byzantine style of the East and of early times. It is an unfortunate habit of some German writers and of many talkers about architecture in that language to use the term for any round-arched mediæval style. A German of good education will speak of the round-arched churches at Bonn or at Cologne as *Byzantinisch,* and will mean something definite by the word. It is not a vulgarism, it is a term in the language which is unfortunately inaccurate. This use of the word is quite like the French use of *Arabe* for the Moslem styles of architecture and design, whether they are found to flourish in Morocco and Tunis, in Middle Spain, in Cairo, or in Asia Minor. The Arabs had no art centre nor architecture of any pretensions whatever; and it is most unfortunate that the great and widespread art vocabulary which is called upon by all the nationalities of European speech for its nomenclature should offer us this misnomer. Precisely in the same manner Byzantine does not mean Romanesque nor does it include Romanesque. It is the other way about, and Romanesque should be thought of as including Byzantine. The word Romanesque means, indeed, quasi-Roman, would-be Roman, or the like, and in that sense it denotes with propriety all the styles which are founded upon the art of the great empire. But this rendering is too large. It will not do to include under the term Romanesque the pointed architecture with ribbed vaults, because in that case a perfected style with very different ends in view had developed itself out of the Roman baths and triumphal arches. In like manner it will not do to cover the glorious design of Sancta Sophia in Constantinople by any such terms suggesting imitativeness or inferiority, for the style of Sancta Sophia is as great and perfect as any in the world.

There are, it seems, two great principal branches to the European tree of architecture. If we go back a step we find, indeed, that the roots are Greek, feeding in a soil of Asiatic and Egyptian nourishment, but that the trunk is Roman, Roman of the first and second centuries; Roman of the colonnades and the Pantheon; Roman of the smaller temple at Baalbek and the Nymphæum at Nimes. This trunk in its secular growth began to divide and to form two great limbs somewhere about 350 A. D., and few are the indications of the early growth of those colossal branches. But one hundred years later one of them was growing vigorously, eastward away, and sending out the most splendid vegetation of semi-oriental appearance; while the other, growing more slowly, and perhaps more directly upward, took six hundred years to show what it was good for, and then, after retaining its full strength and glory for a century, is suddenly found developing what we know as the Gothic Style. You can make a diagram of that architectural tree which will not lead you far astray. That the eastern or Byzantine branch

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ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.
Fig. 1.—West Front and Entrance Loggia on Campus.
Morningside Heights, New York. Howells & Stokes, Architects.



ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.
Fig. 2.—View from North.
Morningside Heights, New York. Howells & Stokes, Architects.

produced strange growth in the way of leaves and flowers, the fact that its smaller limbs became Moslem, even Moorish, and again Alhambresque in their development, merely shows that pollen from other and neighboring plants had fallen upon the blossoms. The other trunk—for these great branches are trunks indeed—the other trunk, being less affected by foreign influences, remained a European growth altogether, and lived and grew strongly until 1400, after which it flowered out into the most extraordinary growth that ever a plant developed, and this was what we call the Florid, the Flamboyant, or in one of its vagaries, the Tudor style, and the style as yet unnamed of the later Flemish town halls.

The Gothic style has been tried in modern times; and it manifests this very evident weakness, that its picturesque character, its vivacity, its variety, the very upward-striving character of its lines, are features contrary altogether to those which modern requirements suggest, and which, perhaps on that account, modern taste demands. No community is content with Gothic buildings for its residences and its State Houses, and the attempts to make the Gothic style do duty in such ways are often too monstrous for careful consideration. I who use these words was a Gothic revivalist once, but, as has been said more than once, I have seen the folly of it. The Gothic Revival in the hands of those who understand it gives us excellent buildings like Truro Cathedral, but can never, as it seems, give us a dwelling-house; at least no dwelling-house has yet appeared at once truly Gothic and truly rational and charming. That Gothic which is in the hands of those who do not understand it may be seen in really hideous examples, in the Hartford Capitol, and in two or three New York City buildings of great size and dignity, which, as their designers still live, it is unfair to allude to merely for the purpose of pointing a moral. And then the modern world certainly does crave the horizontal line, the simple effect of level cornice, the flat or nearly flat roof, the round arch, or, better still for every-day use, the square window capped with a lintel. Picturesqueness is not what the modern man wants in his architecture. Gravity and a tranquil look of delicate finish make up his idea of beauty. Classical art appeals to him in its very weaknesses, and that building is the most esteemed of which the eleven-foot windows deceive him into the belief that they are only seven feet wide. The modern man must build rather like a mediæval, even when he designs, as he thinks, in a Classical way, than like a Greco-Roman—he cannot help that. He will find it impossible, however, to take up the Gothic builders' legacy by daring design in masses and details; he may now try the ways of the great Eastern empire with a chance of success.

The Byzantine style has this fault—that it has never developed a varied and, on the whole, attractive exterior. An exquisite design made in New York for a great church, *and accepted,* more than fifteen years ago, chosen above all others, was Byzantine founded upon St. Mark's at Venice; but even in that case the architects felt themselves obliged to plan a huge and lofty cupola with lines (as I remember them) not unlike those of the cathedral of Florence. It was indeed not octagonal, but circular in plan—in speaking of Florence, I think of its upward-soaring lines only. In those lines it rejected equally the low, rounded shell of the cupola of Sancta Sophia, just swelling above the surrounding roofs, visible and no more than visible even at a great distance—and the low cupola raised on a high drum, a composition familiar to us by buildings of neo-classic Europe, but having its prototype in the East in the cities of Syria, in the cities of Asia Minor and Armenia, in the cities of the Balkan Peninsula, and in Constantinople itself. It was felt that no exterior would be approved if, like the Pantheon or like the Sancta Sophia, its chief and highest roof should have so little upward tendency—should be so low and so little seen from without.

In a church the crux of the whole matter is, indeed, the importance of



ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.

Fig. 3.—View of Apse, from Amsterdam Avenue.

Morningside Heights, New York. Howells & Stokes, Architects.



ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.

Fig. 4.--View from Gallery into Dome and Chancel.

Morningside Heights, New York. Howells & Stokes, Architects.



ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.

Fig. 5.—View from Triforium Gallery.

Morningside Heights, New York. Howells & Stokes, Architects.

the interior, and the supremacy which the interior rightly proclaims over the exterior shell. Even the Gothic style speaks plainly with regard to this. Even the matured thirteenth-century Gothic, that of Reims and of Le Mans, with its wealth of external adornment, its expressive constructional details, its ring of flying buttresses radiating from the piers of the clearstory to buttress-piers standing free outside the aisle, and again outside of the ring of chapels, its pinnacles with their definite task as constructional members, and their still more definite decorative effect, its tracery and, still more, its speaking sculpture—after all that is accepted and admired to the full, it still remains true that the purpose of the builders was to produce a vast interior, high that it might be vast and also well lighted, a gigantic cube of air filled with richly colored daylight. And yet, splendid as the interior is, and still more splendid as it once was, at Amiens or at Bourges, at Ulm or Vienna, at Canterbury or Lincoln, at Leon, Burgos or Gerona, the outside of the Gothic cathedral claims so much that we may feel a little shock of disappointment that the interior should be less overwhelming in its effect than in proportion it should be.

The Byzantine style is centred for us, and contained, almost, within the sacred walls of the church of the Holy Wisdom. And that is not a bad result of the worship of one building of unmatched splendor! The style could never be better exemplified than by a study of that one—the greatest of all Christian fanes, which is, moreover, to all seeming, the noblest piece of architecture among the complete and serviceable buildings of the world. Judged by this standard, the chapel of St. Paul's, at least in its external aspect, is not exactly Byzantine. It lacks the springing effect of the numerous round arches. The exterior has an open portico of wholly columnar style (see Fig. 1), its gables are treated with a cornice of classical look, and they have even the suggestion of a pediment in the returned horizontal cornice which crowns the angle pilasters, as seen in Figs. 1 and 2. Even the apse (see Fig. 3) has its pilasters capped in such a way and used to support so marked an entablature, that, even without the frontons of the basement, with their consoles and architraves, this eastern end would proclaim itself as a building erected under classical influences. This is not said with even the slightest intention to depreciate the design. Messrs. Howells & Stokes did not undertake to build a Byzantine building, or if they ever committed themselves to the statement that that was their chosen design, assuredly they did not say that it was to be fully developed Byzantine of the sixth century. If we must give an historical name to the artistic character of the building, we are safe in saying that it is Byzantine of the earliest inspiration. The Roman engineer of Severus' reign or perhaps of the reign of Diocletian has emancipated himself from the Greco-Roman limitations, the Augustan severity, and the Hadrianic craving for a Grecian revival, with all that that implies; this is what we see, by the mental vision, in St. Paul's Chapel. He has learned from that military rival of the Romans, the rejuvenated Persian empire, what the round arch and the cupola are good for, when freely used. There it is that he has learned to use great spherical pendentives, as seen in Fig. 4. In that way it is that his cupola rises high and light; carried upon a drum of cylindrical form and pierced with sixteen windows, which throw a flood of light into the interior (see Fig. 5); and this to replace the great single eye of the Pantheon of Hadrian's time. So it comes to be that the modenature of Greco-Roman origin has disappeared from the design; that the structure is seen to spring out of the ground as the requirements of an interior design have dictated, with arches wide enough for utility and high enough for grace, with pilaster-like piers carrying huge controlling arches proportioned to one another and to the whole interior, but not based upon a scale of diameters, or of "units."

I am inclined to think that nothing better has ever been done in New York



ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.

Fig. 6.—Nearer View of Chancel and Choir.

Morningside Heights, New York. Howells & Stokes, Architects.

than this building and finishing of St. Paul's Chapel. In forming such an opinion one is swayed by highly sentimental considerations always: for it is not as a work of pure form that a building put to modern uses can ever be judged. It is very exacting in its requirements; and so its full utility as an audience-holding hall must be appraised. It is very complicated in structure, and that structure itself has to be looked into and judged. It professes to be a simple piece of masonry, self-supporting and self-sufficient, and to be free from iron ties, concealed braces and unconfessed devices to hold its parts together; and the truth of this silent claim to our respect must also be tested. And in the last analysis it is especially noteworthy in this, that it claims to be a wholly logical structure, free from the imperial Roman failing of a Greek aspect, with a mortar-masonry build: and this claim —a very high one in our day—we have to test by the evidence.

Therefore it is not a certain clumsiness of detail which can suffice to repel the purist in architecture; nor a rather ungraceful outline of cupola; nor even the evident failure of drum, round shell and lantern to make up a wholly charming composition: it is not all these together that can take away our admiration. The chapel fills a place which it was hard to fill, that of a mediævally built church among pseudo-classic edifices of greater size and greater pretensions, without introducing one discordant element.

One of the chief characteristics of Byzantine work is simplicity of method. The vaults were turned without centres: indeed it was in this way that the use appears of strong mortar and very light



ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.

Fig. 8.—One of the Great Arches Supporting the Dome, in Course of Construction.

Morningside Heights, New York. Howells & Stokes, Architects.



ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.
Fig. 7.—View Toward Entrance.
Morningside Heights, New York. Howells & Stokes, Architects.

PUBLIC

material, bricks and hollow tiles and even amphoræ—hollow jars of baked clay, left hollow and empty in the body of the vault. Now, in St. Paul's Chapel this lightness of structure has been imitated, modern appliances being called in to replace the drain tiles and vases of antiquity.

Figure 8 shows the work going on. In the extreme foreground is the wooden centering of one of the great arches seen in Fig. 5, and in the exact middle of the picture another one of those great arches in a wall, making a right angle with the centering, is seen so far advanced that the construction by means of hollow tiles is easy to understand. Then on the left is seen a cylindrical shaft, probably a staircase-well in one of the piers. Figure 9 shows the very summit of the dome as fixed by the wooden centering, and Fig. 10 shows the inner shell of the dome at a point not very far from its place of springing, that is, of leaving the vertical wall of the drum. In this figure it is seen how the thin tiles laid upon the wooden centering form a cupola by themselves, thin and light indeed, and not sufficiently strong to be left in this state forever, but in course of being reinforced by concentric layers of similar tiles. The first or innermost layer is seen at the top of the picture in course of construction, with the two hands of a mason plainly visible setting a great square tile into its place, and using a trowel of odd form to cement the joints. Just below this, three additional layers have been put into place, their ragged edges showing plainly, and below these edges again is seen a fifth shell of the thin tiles; while other tiles not yet cut down to squares small enough to utilize in the curved construction are piled upon one of the braces. In these straightforward and simple ways, as of the mason of old time, these vaults, these arches, this cupola, were carried up; and Mr. Stokes assures me that he found the greatest satisfaction in the satisfaction of the masons themselves, who enjoyed build-



Fig. 9.—The Summit of the Centering for the Dome.



Fig. 10.—The Inner Shell of the Dome Near its Spring.

ing in this straightforward fashion the complicated and highly organized piece of masonry.

One thing only remains to be spoken of in connection with our thoughts about Byzantine building, and even to be mentioned with a little regret, though without even the shadow of fault-finding addressed to any one. No attempt was made to build without centering. Now, it might or might not be practicable at great cost and with enormous delays and repeated small accidents, to recover the lost art of building in space; but the student of antiquity knows that the experiment would never have been tried had there been wood and carpenters to spare; the trick (for it is no more), the knack of building a vault with nothing to support it, was gained by slow practice on a small scale, and applied to greater and greater spans by those people who had no wood at all; that is to say, no constructional wood, no timber. The people of Syria and Mesopotamia, and southern Persia, at least had no wood; they were hard put to it to get their bricks baked, and indeed for centuries upon centuries they had built with bricks dried in the sun, using also entirely fresh and soft bricks for heavy and very thick walls where such material sufficed. When bricks were to be fired, as when thin and light work was necessary, there was no better fuel at hand than grass and reeds, and the stems and leaves of plants—the thrashed-out straw of their harvests. But the people of forested countries have always used wood for centering, and we infer, though no one living has had experience of both ways of building, that work done in that way goes much more swiftly, however great its expense.

There is another consideration. The pretty pattern made by the tiles laid flatwise, still pretty though so familiar to all of us who still remember brick-laid sidewalks in the streets, which pattern fills the pendentives as in Fig. 6, and the cupola itself as seen in Fig. 5, could not have been laid without the use of centering. In Fig. 5 are seen still more elaborate designs—concentric rings in the rising curve of the dome, and patterns within this ring making of each one a graceful part of the composition. In that figure (5) it is plainly seen that the curve of the dome begins just above the sills of the sixteen windows, and apparently it is hemispherical from that level upward. Now a hemispherical cupola like this is about the easiest thing to build, other than a plain vertical wall, and it can be built perfectly well without centering of any kind. This would have been feasible even among a community of masons firmly intrenched in the traditions of independent woodwork in the preparation of the masonry. And yet it is inconceivable that masons possessed of any skill, however great, could build such a cupola with ornamental patterns on the inner face without thoroughly made centering.

The inference is rather curious, namely, that when we build in the unmodified way of the early time, of the fifth and immediately following centuries, we cannot make our decorations seem constructional. We are always hoping for that very thing, constructional ornament; but indeed the men of the East who used this simple and obvious construction which we praise so highly and long to see revived, could only adorn their interiors by applications made after completion of the work. The solid piece of mason-work had to be rough in its faces, unsightly, unorganized in appearance; and the decorative designer came afterward to veneer it with pretty applications of all sorts, with plastering and stucco, with slabs of alabaster and marble, with painting and gilding, with colored tiles of earthenware, and with bas-reliefs of equally time-defying material. But the architects of St. Paul's Chapel have set themselves to a system of decoration wholly constructional, built up with the walls and identified with weight-carrying arches and the very shell of the structure. And this desirable and admirable scheme could only be carried out by the use of wooden centering and in the freest and most scientific modern way.

Russell Sturgis.



CHATEAU SCHWAB, VIEW FROM 74TH STREET AND THE DRIVE.

Riverside Drive, New York. Maurice Hébert, Architect.

Château Schwab

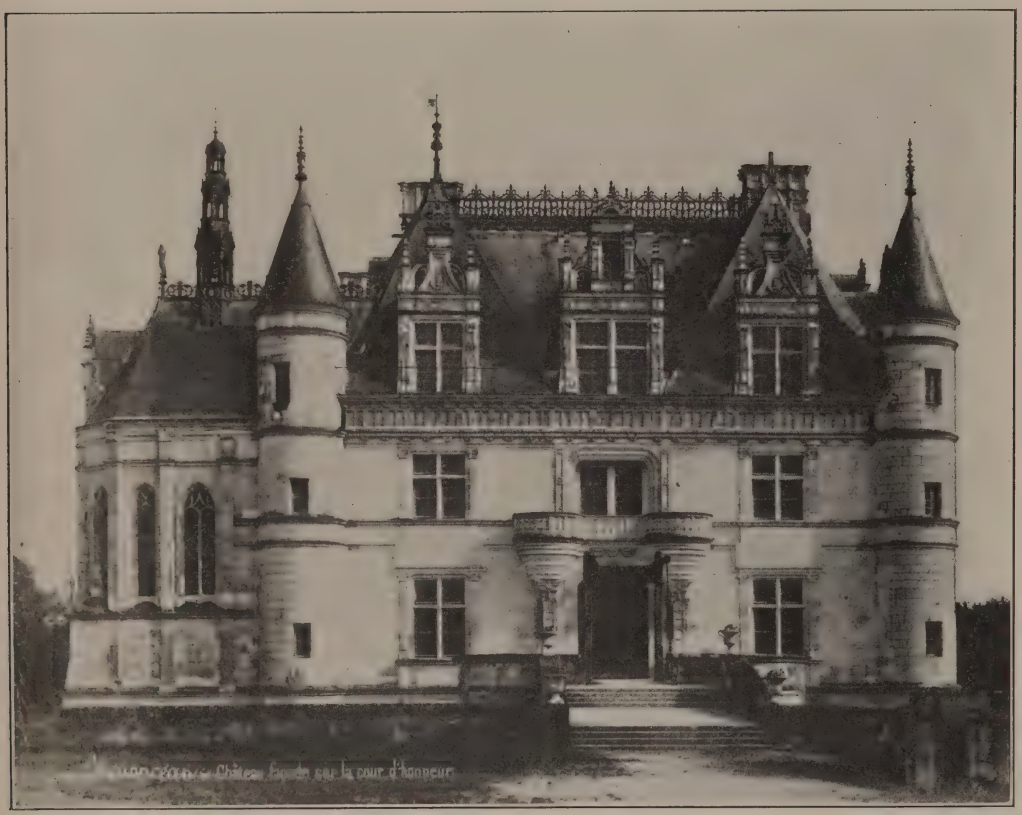
To take a whole block of ground on Riverside Drive, and put a house in the middle of it, is such a dignified and liberal procedure on the part of an owner who can afford himself that luxury that one is not disposed to consider too curiously the architectural results, but rather to commend the example. The wonder is that no other owners among the billionaires should have been moved to follow or to anticipate the example. Riverside Drive is distinctly indicated as a bounding boulevard lined to the landward with villas. It looks out upon by far the finest prospect visible from the shores of Manhattan, saving only, if at all, the outlook from the Battery which has been for near a century unavailable for residential uses, while Riverside Drive seems secure from traffic for many generations, by the lay of the land as well as by its remoteness from the center. Nay, one can magine that when the water front comes into demand for business its wharves and shipping need not interfere with the comfort and pleasure of the cliff dwellers. This conjunction was actually managed in the case of Brooklyn Heights, where the residents at the top could easily endure not only the shipping which their "backs" overlooked, but the storage warehouses of the water front, upon the roofs of which in some cases their gardens grew. It is true they were guilty of the absurdity of making the river frontage the architectural back, laying it up in plain brickwork, and confining their hewn stone and carving to the street front, of which the view was so much less important. But, upon the whole, the plain brick fronts on the river were and are in most cases quite as well worth looking at as the costlier and more pretentious backs on the street. With Riverside Drive, this error was not possible, seeing that the street, the drive, skirts the river shore, and that the builder can be in no confusion of mind as to what is his architectural front. Riverside Drive, from the moment of its completion, seemed plainly destined to be a boulevard of palaces, a *rus in urbe* combining the great prospect, down, up, across the Hudson, with easy accessibility from the commercial quarters and from stage-land and clubland. Certainly it is not an eligible summer residence, though as eligible as any other part of Manhattan. But the outlook upon and across the river is delightful and inspiring at all seasons. Here is an Ochre Point at our doors. One would have expected, nay, one did expect to see the billionaires selling their houses in Fifth Avenue as sites for skyscrapers and migrating to the shore thus prepared for them, to line the landward side of the Drive with houses which might have been almost as well worth looking at from the river as the river from themselves. Suburban they should have been, in the sense of being detached and lighted all round, less pretentious and expansive than the villas of the cliffs at Newport, of which every one requires for its best effect the setting of a park, and the isolation which cannot be had on a mere "building site."

But Fashion did not jump at the chance offered to it, the unique and now irrecoverable opportunity. One or two provident owners set an example of suburbanity, such as the Drive indicated for all its building and which would have given to it, by reason of its far greater natural advantages, far more than the charm of the Bois de Boulogne or any other of the famous Embankments, *Ringstrassen,* or other bounding boulevards of Europe. It suffers, however, in comparison at least with the Continental examples, by its display of what Mr. Steevens calls the "freest, fiercest individualism" which, even to an Englishman, characterizes the building of New York. In any Continental capital the type of building would have been established beforehand and by authority. "They order these matters better in France." We do not order them at all. And Riverside Drive suffers almost as much as the

downtown district, by every owner doing what is right in his own eyes with his own.

One must really congratulate Mr. Schwab on being the first, after nearly twenty years of its development, to recognize the true lines on which the development of the West Side ought to have proceeded. A century ago what building there was on the upper West side, in so far as it was not of farmhouses, was of country seats which were almost or quite entitled to call themselve "estates." It is only just now that an owner has been found liberal and judicious enough so far to emulate their example as to allow himself a house which is entitled to call itself a "place," a mansion "between court and garden." He is the pioneer in detecting the true uses of the West Side, although anticipated by that other hardy pioneer, Mr. Carnegie, who has allowed himself the same luxury of a house standing free, with elbow room all around, in the far costlier region of Central Park East.

What kind of a house best promotes the end thus in view of a suburbanity approaching rurality is a question. The architecture of a "place" ought obviously to differ from the architecture of a house which is an affair, as to its architecture, of one or at most two street fronts. Mr. Carnegie and his arcitect solved this question fairly well, it will be agreed, by adopting a humdrum and unpretentious example of the British *bourgeoisie*, which is at least homely, and yet has been found eligible for what the British text books describe as a "Nobleman's or Gentleman's House." But, of course, the same requirements are met



CHATEAU CHENONCEAUX.
Façade on Court of Honor.



CHATEAU SCHWAB, VIEW FROM 73D STREET AND THE DRIVE.

Riverside Drive, New York.

Maurice Hébert, Architect.

much more artistically, if not much more accurately, in the French château whether of the sixteenth, seventeenth or eighteenth centuries. It is true that the studious unpretentiousness of the British type, "the pride that apes humility," is conspicuously absent from the French type, comformably to the national differentiation which makes the dwellers on the South side of the Channel aim at expression and the dwellers on the North side at repression. A Frenchman might say that the British type illustrated the national "morgue" and "mauvaise honte," while a Briton might retort that the French type illustrated the national demonstrativeness and itch for conspicuousness and ostentation. Certainly the château could never have been evolevd by a builder whose aim was the utmost unnoticeableness compatible with the satisfaction of his domestic requirements. Showiness is of its essence. The choice of a château by a billionaire is an emphatic proclamaton to whom it may concern that he has "arrived."

But there are châteaux and châteaux. The old "hotels" of the Faubourg St. Germain, with their jealous walled seclusion have something of the character of the British aristocracy. The châteaux of the Loire, on the other hand, however they may differ among themselves, are all meant to be looked on and even urgently insist upon that attention. The present owner and his architect have chosen Chenonceaux as their model, possibly upon the ground that Blois has been done to death. In truth, however, the Touraine is dotted with châteaux which for the particular purpose of a great house on Riverside Drive, offer more appropriate and available suggestions than either of these two royal residences. The mine of the French Renaissance has by no means been exhausted or even fully exploited, either in the American city or in the American country. Châteaux there are, comparatively small and of no reputation, the reproduction of which with intelligent variations would be much more to the purpose of appropriateness.

Chenonceaux one cannot fairly call an appropriate prototype for the present purpose. Chenonceaux without the Cher, without the bridge and without the chapel is all that the reproducer found available for his purpose. But these excrescences are precisely what give animation and variety and charm to the original. Shorn of them and reduced, as it is here to the architectural nucleus, Chenonceaux is a very different matter:

> Four gray walls and four gray towers
> Overlook a space of flowers,
> And the silent isle embowers—

but upon the whole it is not seemly to go into detail about the "ladies" whom it used to embower. It is sufficient for our purpose to point out that the middle "block" of Chenonceaux, taken by itself is a rather dull performance. If that were all there was of the château, a "casually quadratic mass" as the German architectural historian calls it, one would be entitled to say that the French builder of the early sixteenth century had sold his birthright for a mess of pottage without getting the pottage. It has neither the wilful and spontaneous grace of the older parts of Blois, nor the classic stateliness and symmetry of Chambord, nor the random picturesqueness and grace of châteaux smaller and less famous, being neither frankly French nor successfully Italianized. Doubtless the bridge and the chapel make a difference. And doubtless the architects of the royal builders, or rather buyers and rebuilders, were actuated largely by architectural considerations, by the desire to do something to improve the looks of the "quadratic mass," in making these additions. The difference which the chapel makes may be judged, here in New York, by looking at the hospital in Central Park West, an intelligent and successful adaptation of the château which is distinctly more effective than this literal reproduction on Riverside Drive.

It is only the central block which the reproducer has chosen as suitable for his purpose. And the central block, as we say, is dull and monotonous without its picturesque appendages. The reproduction seems to be literal, excepting perhaps in scale and excepting that the pro-



CHATEAU SCHWAB, VIEW OF REAR FROM WEST END AVENUE.

Riverside Drive, New York.

Maurice Hébert, Architect.

portion of wall to window is distinctly less in the original. In making the front more visibly solid the reproducer has doubtless been well advised. But for the particular purpose of enlivening the dullness which threatened his work, even this change has not been fortunate.

It is true that in place of the picturesque appendages and outgrowths of the original, the reproducer has undertaken to supply excrescences of his own, in the portes cochères of the sides. But unfortunately they do not serve the purpose of relieving monotony and adding variety. The flat roofed portal of the original with its spreading angle balconies was very well for once. But to repeat it on each flank without the expansion at the corners which gives relief and grace to the original is rather to aggravate the monotony than to relieve it. There is no grace or congruity or life or invention in these features. Features doubtless there might have been at these points which would have given the building the charm which it lacks, but not, one is compelled to conclude, from the designs of this copyist whose work would have been more acceptable if he had continued to refrain from attempting to invent.

Curiously enough, the most attractive part of the building is the least conspicuous, and presumably the least considered. That is the extension at the back, the humble extension in two stories which to mark its inferiority is not merely reduced in height, but is built in brickwork quoined and dressed only with the ashlar of tough and intractable stone of which the main building is composed. This choice and combination of material, with its effective variety of color, would have done very much to enliven the dullness of the design if it had been used throughout the work. It is true that it would not have cost so much money, and true also that so far from expense being "no object" in the pile in general, it is plain that expense has been an important, and the ostentation of expense even a primary object in the construction in general. But it is also true, as the architect must be satisfied, now that he sees his finished and irrevocable work, and as he might have been satisfied beforehand by simply looking at the hospital in the manner of a château which we have already mentioned as standing on the West side of Central Park, that the combination and contrast of material does tend to give to his building, so far as it is introduced, a sprightliness which the monochromatic masonry distinctly lacks. Dullness, to be sure, is a "good fault" when compared with its opposite fault of restlessness. One may reasonably desire a little more, or even a good deal more of architectural interest in composition and in detail than he finds in the Château Schwab. But it is not adapted to discourage the others among the billionaires from following this owner's example and acquiring for themselves a "seat," so to say, instead of only standing room in a blockfront. On the contrary, it is distinctly adapted to encourage them to go and do likewise, and as much better as they can, they and their architects. And there ought to be additional encouragement in the fact that there seem to be no great obstacles in the way of doing better.

The Restoration of the Château de Nantes

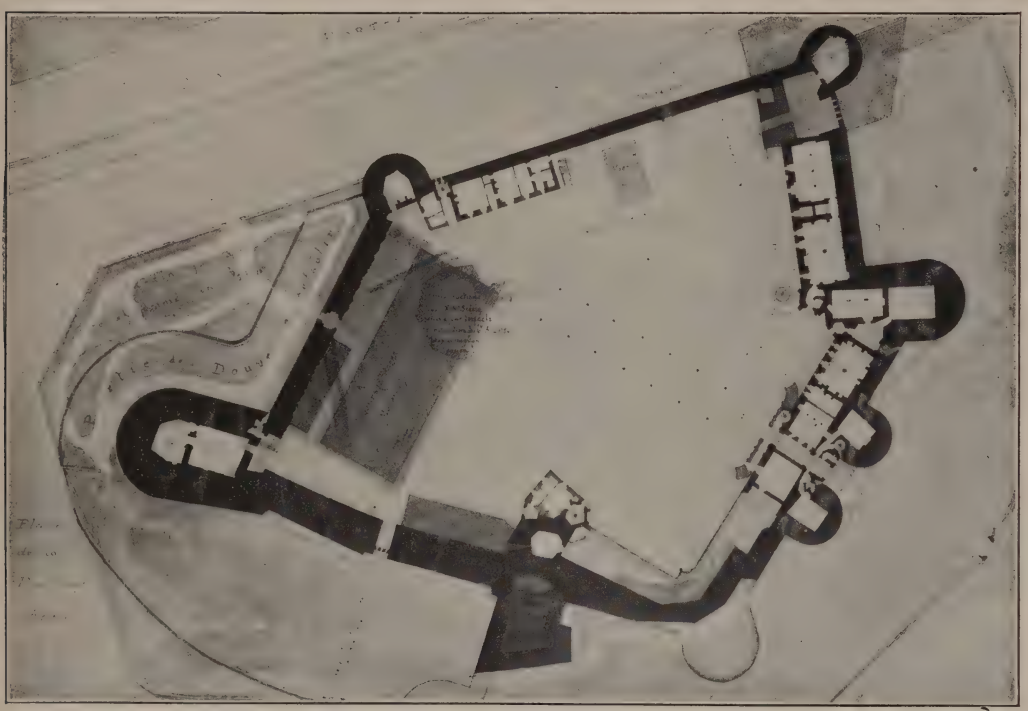
On looking back to 1830, when the study of archaeology began to occupy public attention in France, one cannot but be impressed by the immense progress which has been made in the preservation of her ancient buildings. The number of magnificent cathedrals and churches, fine old castles and houses which have been saved from rack and ruin within the last seventy years is astonishing. Especially has this rich harvest been reaped since the formation of the Commission des Monuments Historiques in 1841. So fruitful, in fact, has been the work of this important official body, which, by the way, has been fortunate in having so faultless a writer as Prosper Mérimée among its inspectors general, that a superficial observer, consulting its voluminous records, might easily conclude that all the most remarkable buildings in France were now safe from destruction. In coming to such a conclusion, he would, however, be greatly in error. Far from the work of the Commission des Monuments Historiques being completed, many ancient structures of paramount architectural beauty and historical interest are, alas! still in the hands of the Philistines. The fate of the Château de Blois between 1833, when it became a barracks, and 1841, the date on which its restoration was begun, is still that of many fine castles; and it has long been apparent to French lovers of architecture that, unless these precious relics of the past are rescued from the military authorities, they are doomed at no remote period to certain destruction.

A recent visit to the Palace of the Popes, at Avignon, convinced me that a fine old building can have no harder fate than that of being turned into a *caserne*. The lofty banqueting hall of that splendid specimen of military architecture of the 14th century—half fortress and half palace—has been converted into three-story dormitories; nearly all the frescoes with which walls and ceilings were covered are hidden under a thick coating of whitewash; and in one of the chapels where the mural decorations have been left uncovered the aureoled heads of saints have been cut away and removed. This last act of vandalism was the work of a colonel, who is said to have sold the paintings to a collector. Fortunately this is an extreme case. French officers are, as a rule, incapable of such acts, and moreover, do everything in their power to prevent injury being done to the buildings where their men are quartered. But notwithstanding regulations, a vast amount of wilful and irreparable damage is invariably committed by ignorant soldiers, as thousands of names carved and scrawled on the painted walls of the Palais des Papes amply testify.

Militarism would seem to have a certain degrading influence on everything with which it comes into contact, and to leave its indelible mark on buildings as on individuals. A similar state of things to that at Avignon is to be found at the Château des Jacobins, at Toulouse, at the Château du Mont-Saint-Michel, at the Abbaye de Fontevrault, and at the Château de Nantes—to mention but a few of the historic buildings of France which are under the control of the Minister of War. The knowledge that these fine old piles are undergoing a slow process of degradation weighs heavily on the minds of those who have the artistic patrimony of the country at heart, and the means of saving them is a constantly recurring problem. It must be confessed, however, that really practical suggestions are few and far between—so rare, indeed, that any intelligent plan by means of which one or other of the castles of France can be preserved immediately arouses the keenest interest. Hence the careful attention which has been given in Paris to the proposal of an eminent architect, M. Henri Deverin, to transform the Château de Nantes into a municipal palace for that town, after its evacuation by the mil-

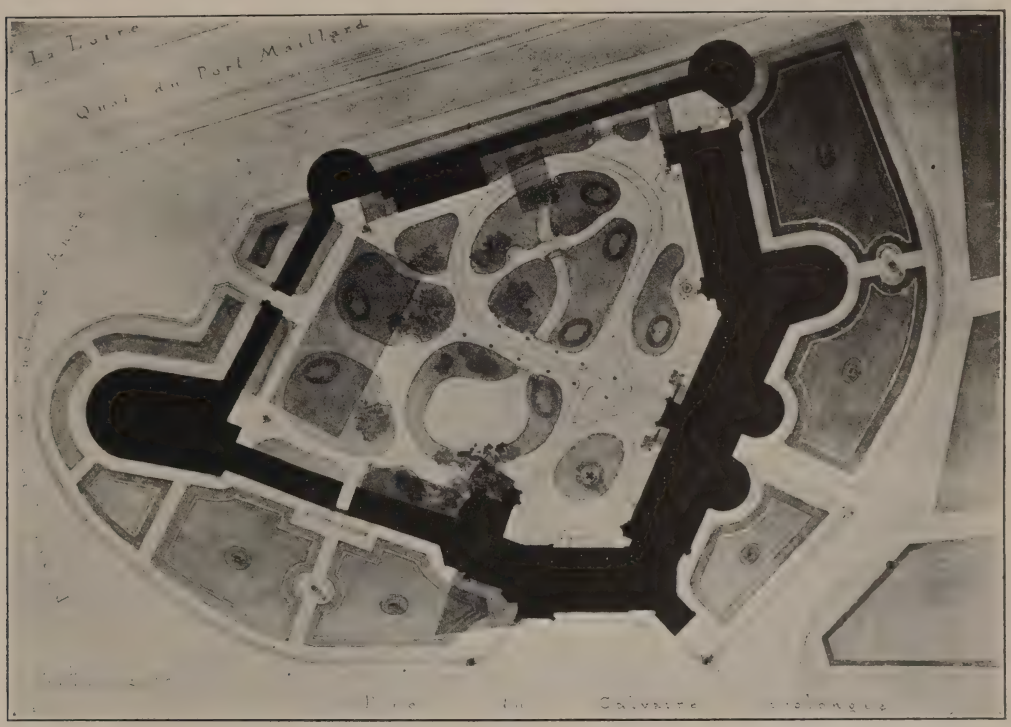
itary authorities, who have shown a disposal to come to terms with the municipality.

M. Henri Deverin, who is one of the chief architects attached to the Commission des Monuments Historiques, the historical buildings of the Loire-Inférieure are under his control, has for many years past been a prominent exhibitor at the Salon of the Société des Artistes Français, where he has obtained many awards for his admirable drawings. In 1878 he was awarded a third-class medal for an elevation of the Church of Parthenay-le-Vieux; and in 1882 a second-class medal for drawings of a bay of the Baptistery of Ravenna and of the Château de Chinon. At the 1890 Salon he exhibited drawings representing "the present state, restoration, and details of the Church of Saint-Jouin de Marnes," which brought him the medal of the Société Centrale des Architectes Français. Between 1891 and 1894 he had on view drawings of the Temple of Daïon, at Angkor (in collaboration with Lieutenant Delaporte), the Château de Coulonges-les-Royaux, the Abbaye de Celles, and the Church of Airvault, before and after restoration. In the latter year he was awarded a first-class medal. At the Exposition of 1889 he had obtained a bronze medal, and at that of 1900 he was given a *médaille d'or*. Undoubtedly the most important works which he has exhibited since 1894 are the drawings of the Château de Nantes which were on view at the 1904 Salon. These represented the castle before and after restoration, embodying his idea of converting the former residence of the Dukes of Brittany into a Town Hall and municipal buildings. At the same time they showed certain interesting details of restoration which were carried out under the artist's superintendence in 1903. Displaying a profound knowledge of the spirit of the architecture of the end of the 15th and the beginning of the 16th Centuries, these drawings, covering eight double elephant sheets, were admired by architects and artists alike. In every-



PLAN OF THE CHATEAU DE NANTES—PRESENT STATE.

body's opinion, they were by far the best exhibit in the architectural section, and had they but been on a little larger scale there can be no doubt that their author would have received the *médaille d'honneur,* the highest award which the Société des Artistes Français bestows. As it was, M. Deverin did not go without his reward. The Académie des Beaux-Arts gave him the Prix Duc, a prize of the value of 3,700 francs ($740) which is awarded every two years to encourage the question of the restoration of the Château de Nantes. The reasons which impelled him to do so are easily comprehended. Owing to the great increase which has taken place in the commercial prosperity of the town and port of Nantes, nearly all the public and private buildings dating from the Middle Ages have disappeared, and with the exception of the Church of Saint-Pierre, it possesses but one important historic landmark—the ancient castle of the Dukes of



PLAN OF THE CHATEAU DE NANTES AFTER RESTORATION.

advanced architectural work; and the Société Centrale des Architectes Français followed suit with the Dejean Prize and Medal, which, in the words of the society's regulations, is "to encourage and reward studies, researches, or works concerning architecture."

Although executed in less than four months, this superb collection of water-color studies represents in reality, many years' work and study. It is, in fact, seven or eight years since M. Deverin first began to occupy his attention with Brittany. But though the only really noteworthy ancient building in the town it is unique of its kind. In spite of additions made in the 17th and 18th Centuries, in spite of the making of a quay, facing the Loire, which covered up the base of its curtains, and above all, in spite of the explosion of a powder magazine on May 25, 1800, which destroyed an entire wing and one of the towers, this feudal palace and fortress is one of the most perfect in existence. Fully recognizing its historic and architectural importance, the munic-

ipal authorities have made several attempts of recent years to regain possession of the château, which has now been used as a barracks for more than a century. But their overtures were invariably fruitless. In 1898, however, the military authorities themselves proposed an arrangement, agreeing to evacuate the castle if the town would provide them with land and buildings suitable for their purpose. It was at this time that M. Deverin a chief architect of the historical buildings amongst which the Château de Nantes is included, began seriously to study the question of its restoration. It naturally occurred to him that should the negotiations between the military and municipal authorities be successful, the castle could be transformed into a Town Hall, and in order to make it worthy of so important a commercial town as Nantes, thoroughly restored. The fact that the present municipal buildings are wholly inadequate for the needs of the town, and that a new Town Hall will sooner or later have to be built, was a strong argument in favor of his idea.



EAST VIEW—PRESENT STATE.

Encouraged by officials with whom he had conversations on the subject, M. Deverin set to work to prepare a series of plans and drawings representing the castle before and after restoration. His task was rendered all the easier by the fact that he was already engaged upon the restoration of the interior façades, which were in a sad state of preservation, the Town, Department of the Loire-Inférieure, and State having subscribed a sum of money for that purpose. These drawings, however, did not assume anything like completeness, and the negotiations for the evacuation of the château having been broken off, M. Deverin placed them in his portfolios without much hope of ever seeing his project put into execution. It was not until some time later that he was persuaded to resume his preliminary work, to make a more thorough study of the matter, and it was then that these drawings formed the basis for the extensive series exhibited at the Salon. Whether they will ever be carried out remains to be seen. Suffice it to say, they have won many adherents to the proposal to restore one of the most interesting of French castles, and it is quite possible that they will largely contribute to the successful outcome of negotiations which will inevitably have to be resumed between the civil and militay authorities of Nantes.

Until M. Deverin began to take an interest in this matter, only the present buildings of the château, in considering the problem of its transformation into a

Town Hall, had been taken into account, and it is undeniable that there were serious objections to the proposal. As they exist at present they are undoubtedly badly adapted, both as regards means of access and distribution, for fulfilling their proposed new rôle. Moreover, one of the primary requisites of a Mairie is a large and easy entrance for the public, and this could not easily be arranged as the castle buildings now stand. Nevertheless it would be quite possible, after a few slight alterations had been made, to utilize them for the public library, city archives, etc., which are not so rigorously subject to such an exigency. There then remains to be solved the somewhat delicate problem of finding an architectural combination which will fill all the requirements of a modern Town Hall. Whilst the ancient buildings are respected, new ones must be added, and these, both in their general appearance and details, must be as near as possible in the style of the 15th and 16th centuries.

Bearing this well in mind, M. Deverin has chosen a site for the main building of his Town Hall facing what should eventually be one of the principal thoroughfares of the town, the Rue du Calvaire *prolongée*, now known as the Rue Prémion. The present entrance to the castle, between two towers, was manifestly too narrow to serve his purpose. Moreover, the position which he has chosen was, as it were, prepared for him by the explosion already mentioned. The courtyard of the château, formerly enclosed by tall buildings on three of its sides, is now open on the northwest, where the powder magazine was situated, and is limited merely by a modern retaining wall devoid of all character. The breach extends for about sixty yards. This would be a splendid frontage for the new building, which besides being a most picturesque addition to the new street, would serve a useful purpose in marking, approximately, the former perimeter of the château.

As to the interior of the proposed Town Hall, M. Deverin's idea is to have a large central hall on the ground floor, communicating on the right with the entrance to an *escalier d'honneur* and some of the offices. This hall would be doubled by a gallery looking on to the courtyard. To the left, under a slightly projecting pavilion, would be a carriage entrance, vehicles passing out of the courtyard by way of the bridge between the two towers where the present entrance is situated. Adjoining this pavilion but slightly set back, and connected with the 14th Century *donjon*, which would be freed from obstruction and restored, would be a secondary building for the use of dependent departments. On the



EAST VIEW—RESTORED.

first floor would be the Council Chamber, the *Salle des Mariages,* the private rooms of the Mayor and his deputies, and various other offices. Finally the *Salles de Fêtes* could be situated on the first floor of the *Grands Logis,* which, of course, would be restored, the upper rooms being used for the archives, library, and other similar departments.

M. Deverin's proposal embraces a second large staircase leading to these rooms and situated in a new building erected on the South side of the château, at the far end of the wing known as the *Grands Logis,* which, as will be seen from the plan, is unfinished, and the huge bare gable of which, with its two unequal sloping roofs, presents a somewhat wretched appearance. A pavilion, joined on to the toothing, which is still quite visible, would serve the purpose of hiding this ugly gable, and, moreover, would provide a second means of access to the Town Hall.

The juncture of the new buildings with those of the old château, facing the Rue du Calvaire, should be clearly indicated in the architect's opinion, by a robust tower, with the object of making the very wide angle less apparent. Adjoining towers and military buildings also make this a necessity. Instead of rebuilding the tower known as the Tour des Espagnols which stood at this corner of the castle, M. Deverin has hit upon the happy idea of having a square pavilion, which would form a very ornamental as well as a useful addition to the main building of the municipal palace. This pavilion would be the shell for the grand staircase and at the same time the clock tower and campanile.

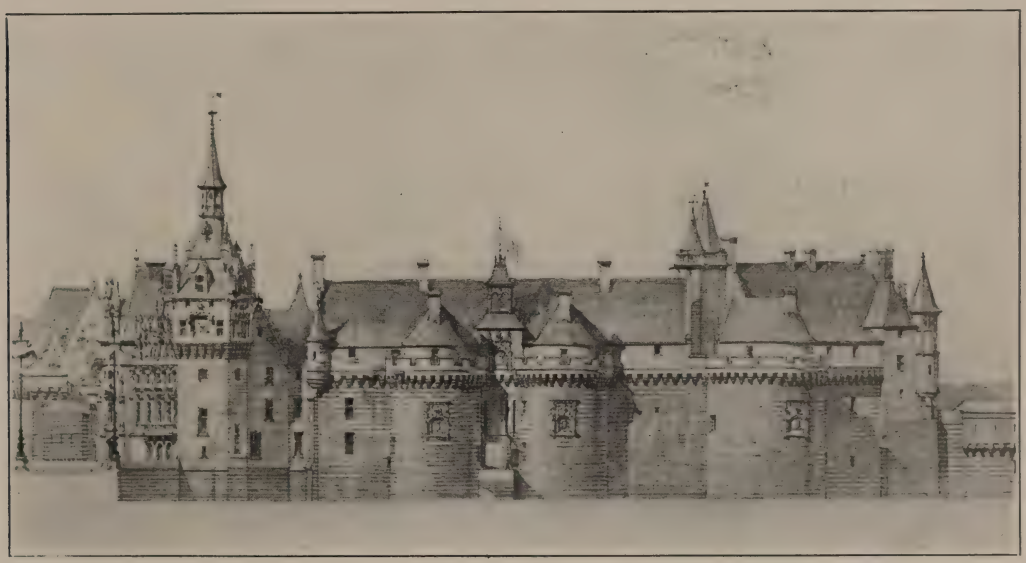
Without going into too detailed a description of the elevation, which, moreover, is clearly shown in the various reproductions from the architect's drawings accompanying this article, I may point out that the façade has five large mullioned windows, separated by buttresses which might support at their summit the statues of celebrated inhabitants of the town. Above, accompanied by dormer windows and enclosed in a decorative *motif*, composed of pinnacles and gables would be a surbased recess for the arms of the town, which might be executed in colored enamels.



WEST VIEW—PRESENT STATE.

In the transformation of the Château de Nantes into a Town Hall, it would be absolutely necessary, as an accessory operation, to demolish the large 17th Century bastion which stands to the left of the breach made by the explosion of 1800. This bastion is in a very dilapidated condition, and its removal would open up a general view of the Town Hall from the Rue du Calvaire and the Place de la Duchesse Anne. M. Deverin thinks that

it is probable that, as happened in the case of the Mercoeur bastion on the quay side, the remains of 13th or 14th Century curtains will be brought to light; and if so this will not only decide an interesting point in the archæological history of the castle but will enable its ancient *enceinte* to be restored in its integrity. He is of the opinion that this work should be completed by the demolition of the heteroclite buildings of various periods which surround and hide one of the most important remains of the castle—the old 14th Century *donjon*. It would then be possible to restore it to its former appearance, including its little tower, which is of later date. Various other buildings and additions, dating from the 17th to 19th Centuries, would also need pulling down. Especially would this be necessary in the court-yard, which is disfigured by several large store-houses, doubtless of great utility to the military authorities but most displeasing to the eye. After this had been done, the court-yard could then be turned into a public garden with lawns, flower-beds, and foot-paths.

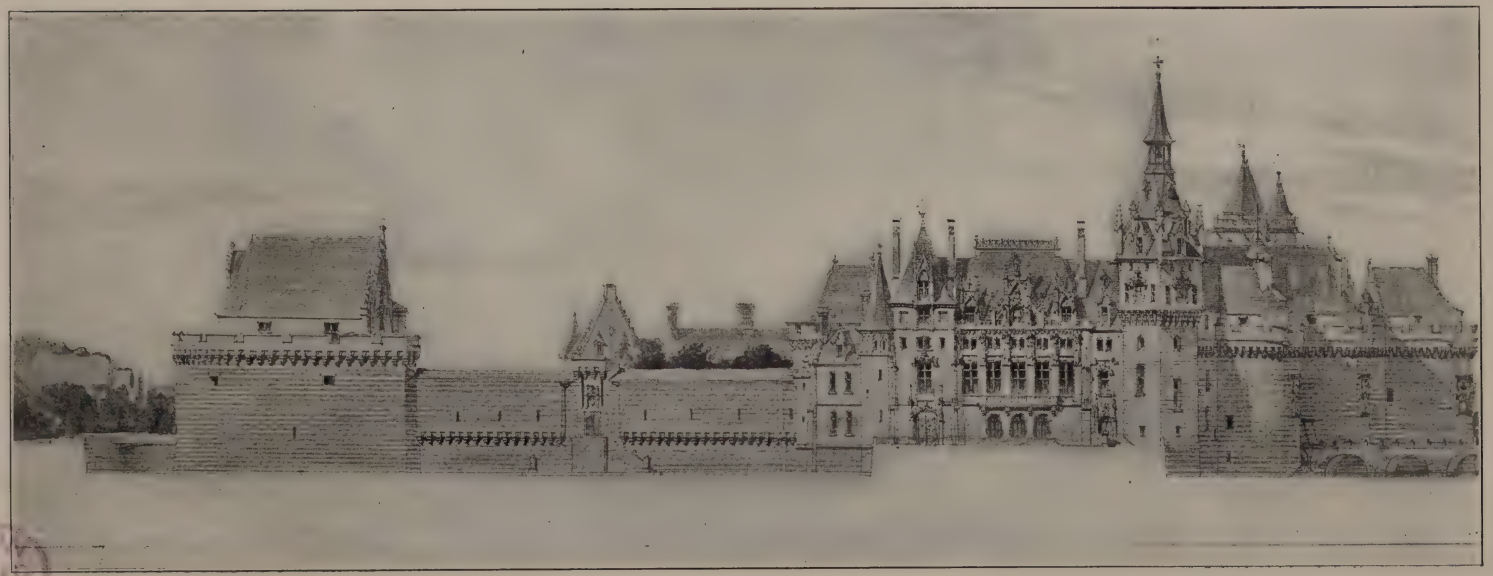


WEST VIEW—RESTORED, SHOWING TOUR DE LA BOULANGERIE AND TOUR DU PIED-DE-BICHE WITH PRESENT ENTRANCE.

The author of this fascinating proposal does not fail to recognize that certain objections, based both on artistic and practical considerations, may be made to it. He is convinced, however, that these can easily be refuted. It is possible, for instance, that the Commission des Monuments Historiques might hold that the building of the new portions of the Town Hall and the consequent alterations which would ensue would make too great a change in the general appearance of the castle. M. Deverin admits that a great change would undoubtedly be the result, but he claims, and justly so in my opinion, that its artistic appearance, far from being injured, would be vastly improved. He considers that the exceptional circumstances of the case overrule such scruples. First of all, the taking possession of the château by the Municipality of Nantes would be an infinitely greater guarantee for its preservation than that which is at present offered the Commission by the Military Authorities, and that is one of the very objects for which the Commission des Monuments Historiques was formed. In the second place, it will be absolutely necessary, on the evacuation of the castle, to put it to some use, and by turning it into a Town Hall—the only possible solution—the fine old building would at last play a rôle worthy of its glorious past. This would naturally ne-



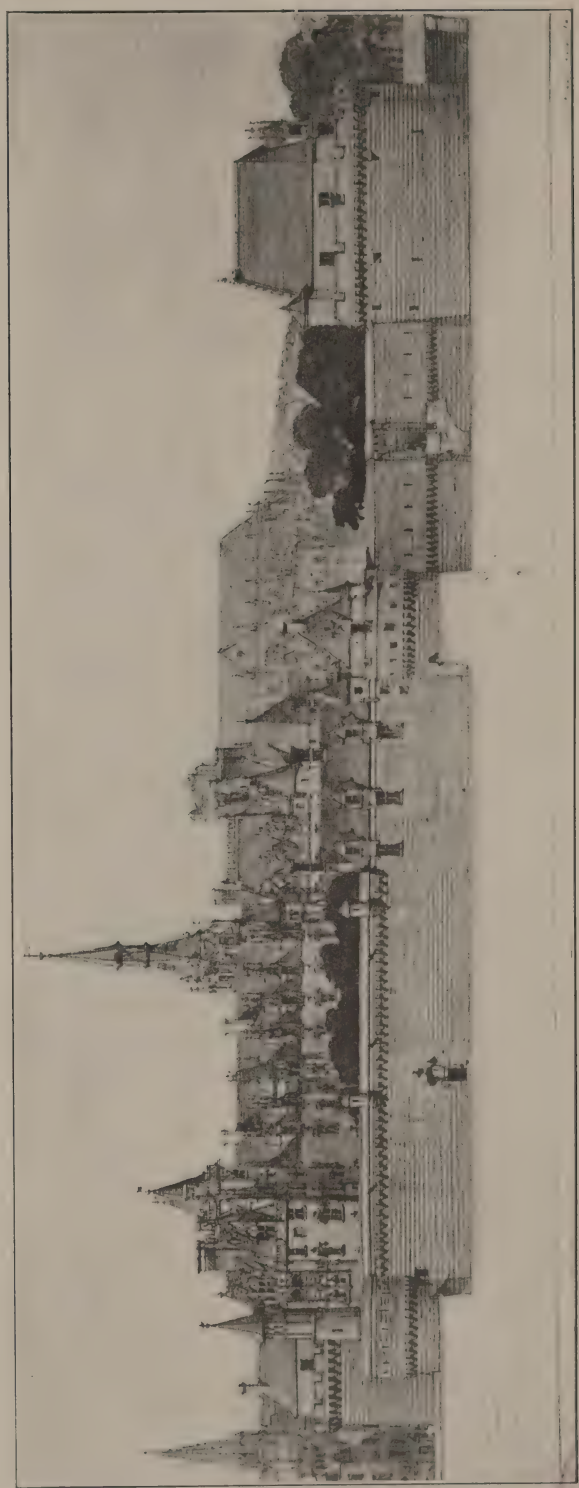
NORTH VIEW—PRESENT STATE.



NORTH VIEW—RESTORED.



SOUTH VIEW—PRESENT STATE.

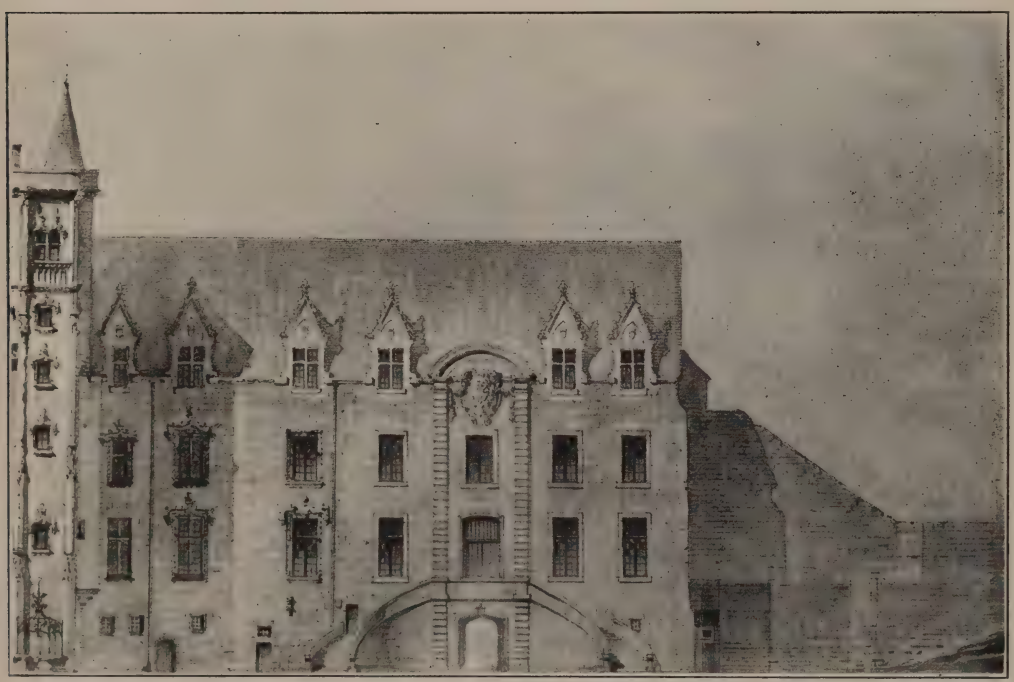


SOUTH VIEW—RESTORED.

cessitate new buildings, but there need be no fear of their spoiling the appearance of the old portions, since the work would have to be carried out under the superintendence of the Department of Fine-Arts. Nor must it be forgotten that the removal of the inartistic and archæologically uninteresting buildings which have sprung up around the castle in the course of centuries would be a gigantic step towards the improvement of its general appearance.

A much more serious question is the financial one. It would be idle to deny that, quite apart from the compensation required by the military authorities, the realization of M. Deverin's project would entail great expense. Would the sum required be greater than that which would be necessary for the building of a Town Hall on another site? Considering the amplitude of the architect's plans, it most probably would be greater. It must, however, be remembered that the advantages from quite a number of points of view would amply repay this extra expense, which, moreover, would not be felt by so large and wealthy a town as Nantes. It should, finally, be pointed out that the Department of Fine-Arts would, as it has done for many years past, contribute towards the restoration of the old portions of the château, the Department of the Loire-Inférieure would doubtless continue its subventions, and, in all probability, the Conseil Général would make a grant in aid of an ancient building, the preservation of which interests the whole of Brittany.

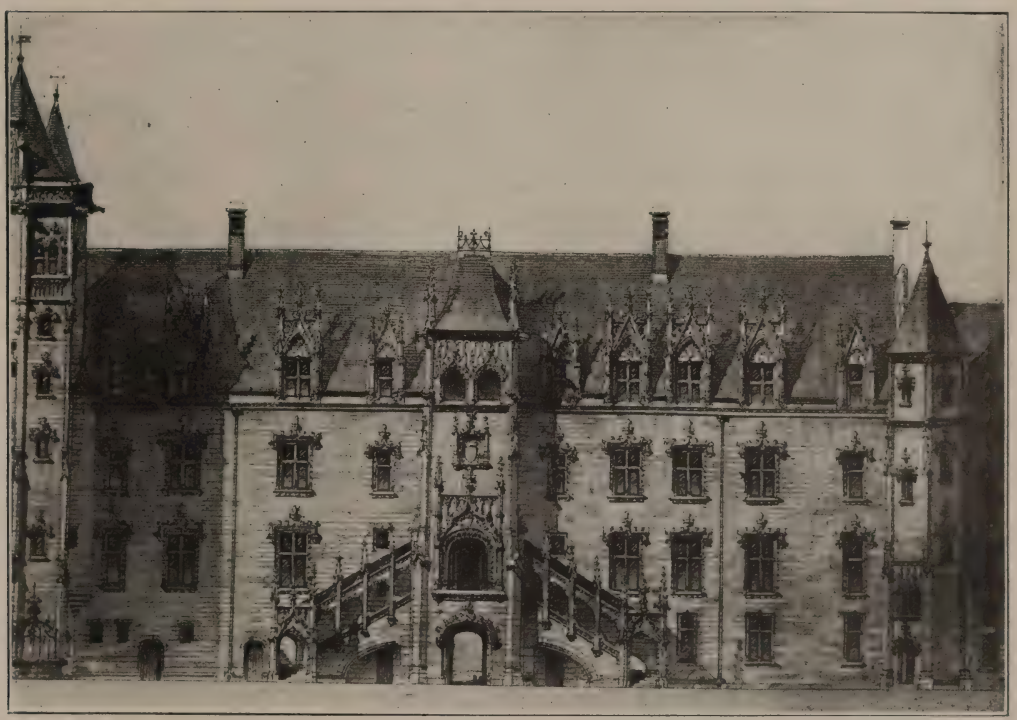
Although I have already referred to



RIGHT WING OF THE LOGIS DUCAL—PRESENT STATE.

the series of drawings which express M. Deverin's ideas in so clear and graphic a manner, I should like to be permitted to return to them once more, with the object of mentioning two or three which seem to me to be worthy of special note. One of the most interesting of these careful studies is that representing the two loggias of the ducal palace, for here we see part of the work of restoration which has actually been carried out under this eminent architect's supervision. With the exception of the foliations of the ar-

cades, the whole of this portion of the château was restored in 1903. The decoration of "As," surmounted by coronets and ermines—the initial and royal insignias of Anne of Brittany—was executed over traces of the originals, a work which called for considerable delicacy of treatment. The two sketches of the right wing of the Logis Ducal before and after restoration will be of interest to my readers. A portion of this building, including the double staircase leading to a projecting pavilion,

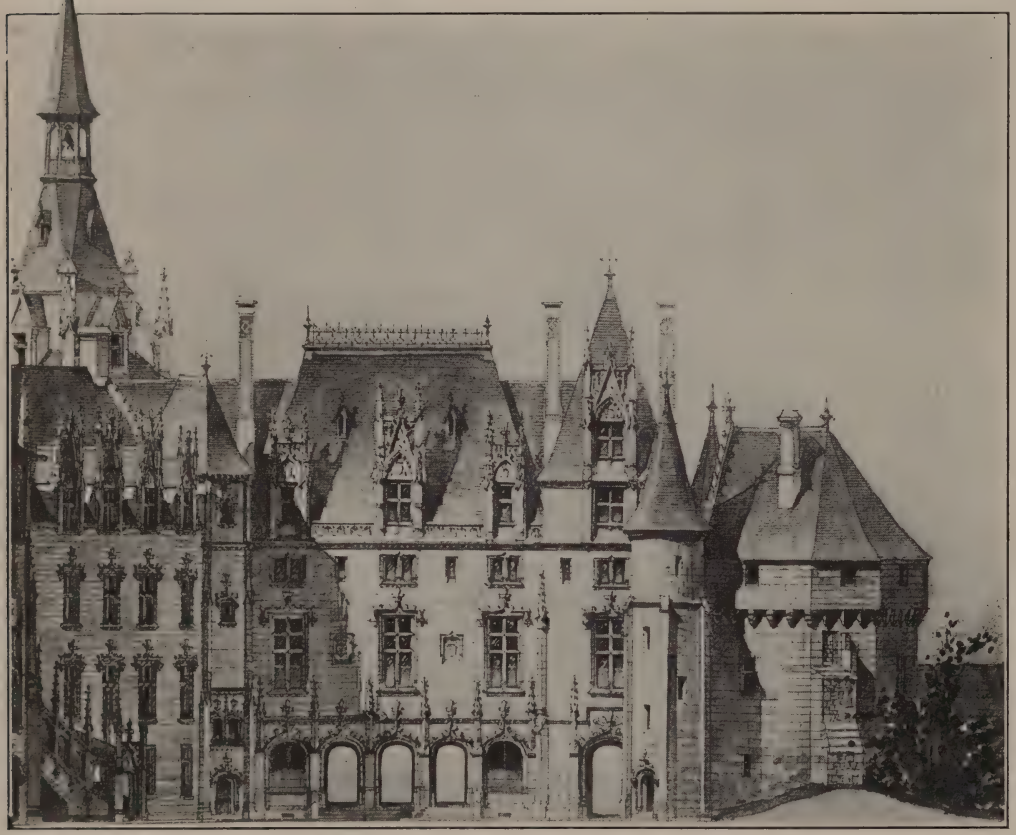


RIGHT WING OF THE LOGIS DUCAL—RESTORED.

was destroyed by a fierce fire in 1670. As will be seen on comparing the two pictures, the present building has undergone considerable modification during the last two centuries. The dormer windows are modern. It is hardly necessary to say that in this instance, as in the case of other portions of the castle, M. Deverin's scheme of restoration is based upon ancient documents. Let me also draw attention to the ancient well to be seen at the base of the left wing of the Logis Ducal, a well surmounted by a veritable masterpiece of wrought-iron work which M. Deverin has depicted with his usual skill.

Up to now I have dealt principally with the exterior of Château de Nantes. The interior is no less interesting and will lend itself equally well to satisfactory restoration, in spite of the regretable traces of military occupation which are to be seen on every hand. The rooms of the Grands Logis and other wings of the château are, as is usual in French barracks, whitewashed; clumsy partitions have been put up for utilitarian reasons; and the floors are made of common deal. Grievous as this state of things undoubtedly is, there is, however, no reason to despair of seeing it remedied. The Château de Blois was in a similarly dilapidated condition when placed in the hands of Dauban, the Château de Langeais was even in a worse plight when M. Lucien Roy was instructed by M. Jacques Siegfried to restore it, and we know what a joy to the eye these two castles now are. Still, on walking through the rooms of

the old castle of the Dukes of Brittany, rooms where so many important historical events took place, one cannot but wish that they may soon be taken over by the Municipality of Nantes. The château was wrapped up with the history of the town for centuries, so that for sentimental as well as artistic reasons such an event is eminently desirable.



VIEW FROM COURTYARD OF PROPOSED NEW BUILDING IN CONJUNCTION WITH THE RIGHT WING OF THE LOGIS DUCAL AND 14TH CENTURY DONJON, RESTORED.

As to the origin of this fine monument of the Middle Ages, its early history is as obscure as that of the town of Nantes itself. It is said by some archæologists to have been built by Guy de Thouars in 1207; others contend that it was commenced about 936, in the days of Alain Barbe Torte; and others, again, think that, on the site of the present castle, there existed in the 4th Century a tower which formed part of a Roman wall, and that this tower, restored and added to by Alain Barbe Torte, Guy de Thouars, François II., Anne de Bretagne, and the Duc de Mercoeur, became the Château de Nantes. There can be little doubt, on looking at the evidence, that the last theory is the correct one. The Château de la Tour Neuve did not, however, have much of a history until the 13th Century, and although Guy de Thouars, who was crowned Duke of Brittany in 1205 at Nantes, was not the actual founder of the castle, he it was, at any rate, who made it a strong fortress. The capital of Brittany was then frequently attacked by barbarians who came up the Loire in boats. This work of fortification was continued by Pierre de Dreux, who succeeded Guy de Thouars in 1214, and by his son, in 1237. It was probably about this time that the Dukes of Brittany left

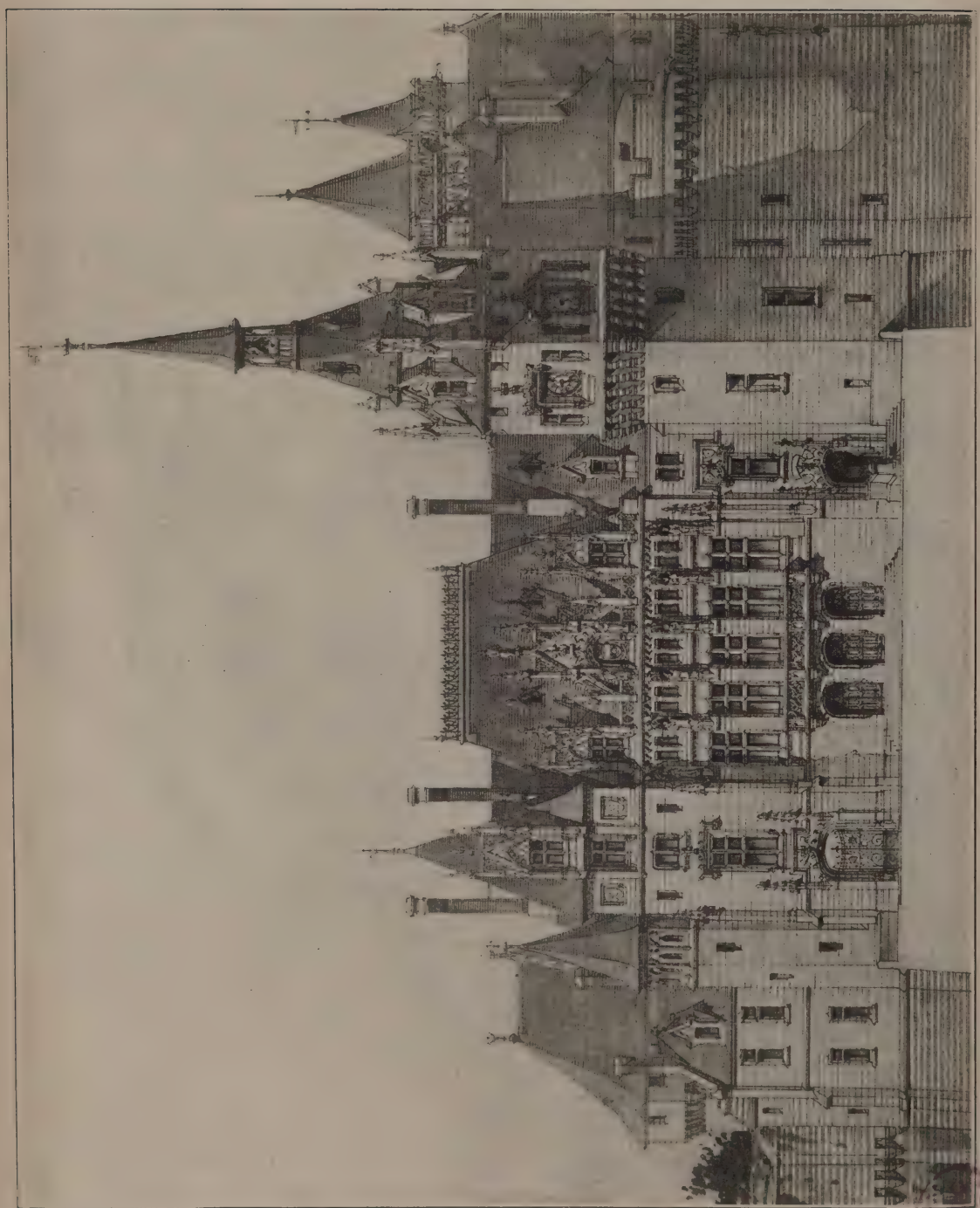
their Bouffray fortress to live at the Château de Nantes.

As to its appearance in the 13th Century, it is difficult to give any precise de-



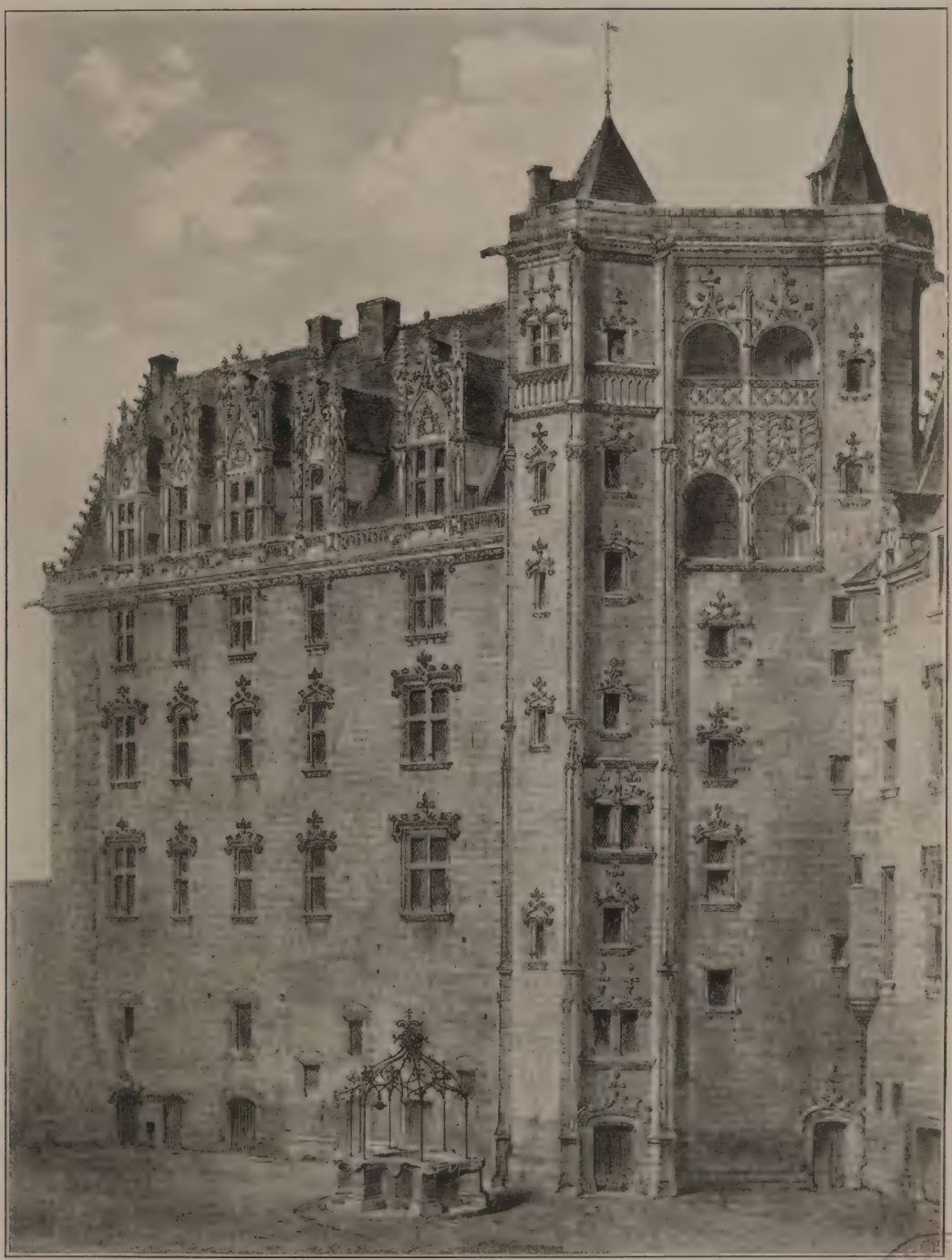
The two loggias of the Ducal Palace—Restored in 1903.

tails; but it appears certain from ancient records that it was not merely a tower for the defence of the town—it was, at one and the same time, a ducal palace and a fortress, "with bastions, curtans, moats, and a draw-bridge." François II. of Brittany pushed on the work at the castle with great activity, as can be seen from references in the *Registres de la Chancellerie de Bretagne* for 1477 to certain "reapparacions du chasteau" and to the building of kitchens in an "édifice neuf." This "new edifice" was the magnificent palace which is to be seen to the right on entering the court-yard of the castle. The duke commenced the work of rebuilding the château about 1466, and, in addition to this wing, he was responsible for four of its towers: the Tour de la Boulangerie, the Tour du Pied-de-Biche, the Tour des Espagnols, and the Tour des Jacobins. The first, situated to the right of the present entrance to the castle, takes its name from a bakery which was formerly on the ground-floor; the Tour des Jacobins, situated to the left of the same entrance, is called after a prison of that name. On the death of François II., during whose reign the castle changed its name from the Château de la Tour Neuve to that of the Château de Nantes, it came into the hands of his daughter, the celebrated Anne de Bretagne, who had been born there in 1476. Anne further strengthened the fortress by building three more towers. But she accomplished much more than this; her marriage to Charles VIII. brought about the union of France and Brittany, one of the most important historical events of the 15th Century. She was afterwards married to Louis XII., the marriage contract being signed at the Château de Nantes on January 7, 1499. For two hundred and fifty years after her death, which occurred at Blois on January 9th, 1514, the castle continued to be the scene of remarkable incidents, and, indeed, few castles in France are richer in memories of the past. *Frederic Lees.*

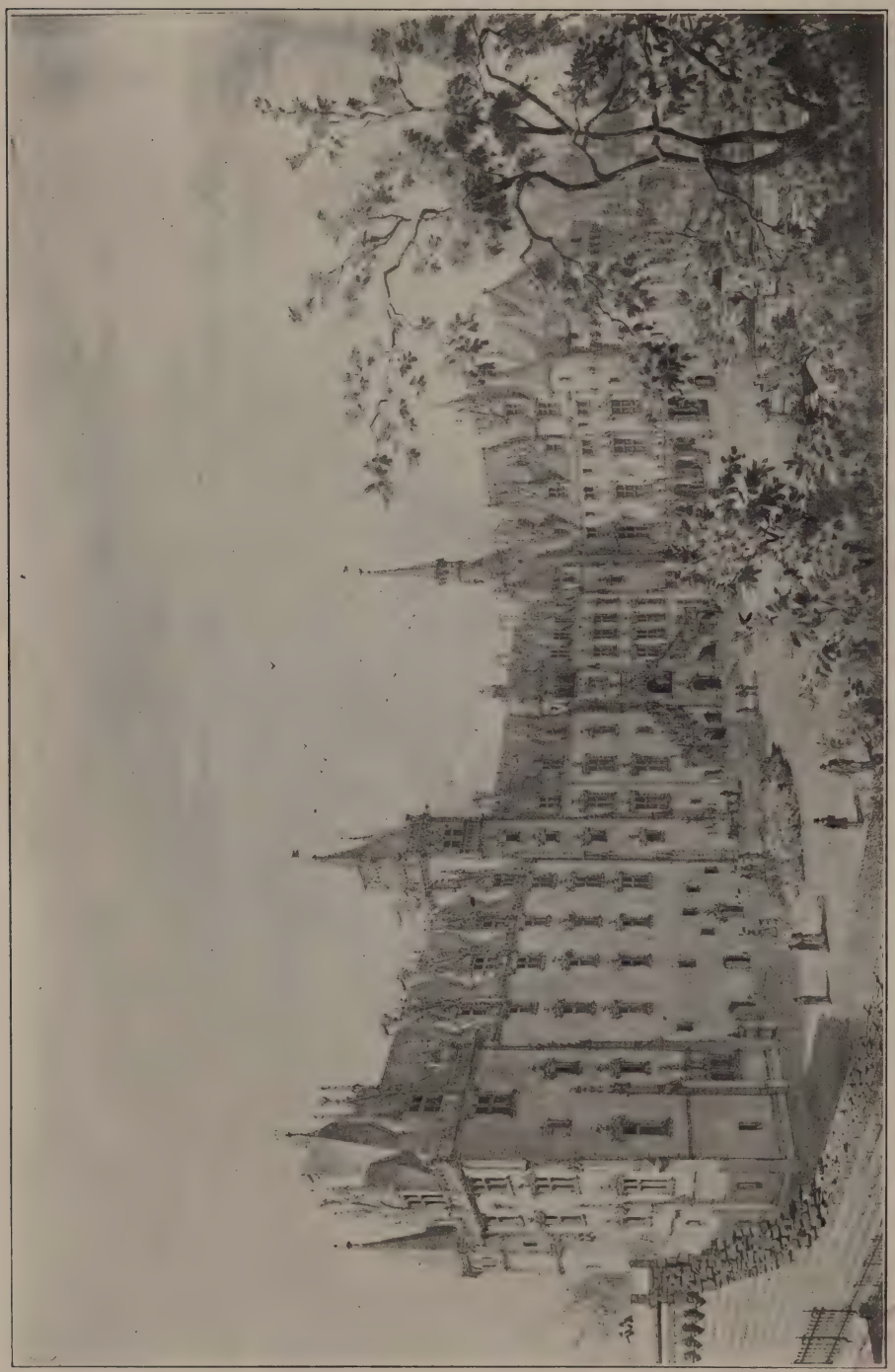


PROPOSED FAÇADE OF TOWN HALL, FACING THE RUE DU CALVAIRE.

LIBRARY



LEFT WING OF THE LOGIS DUCAL ABOUT 1860.



A GENERAL VIEW OF THE CHATEAU DE NANTES AFTER ITS RESTORATION.

Some Apartment Houses in Chicago

There can be no doubt that the apartment house is destined to become an increasingly important American type of building. Economic conditions are making it necessary in all the larger American cities. It is only forty years ago that no American families, barring those who were very poor, cared to keep house under the same roof with other American families, and it was in 1868 that the first apartment house was erected in New York City. This building was in the beginning regarded merely as an innovation from abroad, and it was, significantly enough, both designed by an architect of French training and planned partly for the use of artists. But after a beginning was once made, they increased rapidly, until at the present time, so far as the original city of New York is concerned, the flat has succeeded in crowding out the private residence quite as effectually as it has in Paris. No private dwellings are now erected in the borough of Manhattan, except for very rich people.

The movement has not made the same headway in other American cities; but ever since the industrial revival began, ten years ago, apartment houses have been forming a larger and larger percentage of the bulk of American urban building. They have not only become more numerous in large cities like Boston and Chicago, but the increase in population of the smaller cities, like Buffalo, Cleveland, Detroit and San Francisco, and the spread of this population over a larger area, have increased the price of real estate to a point that has justified the construction of many apartment houses. During the next twenty-five years these cities will undoubtedly run the same course as New York. They will never be as completely possessed by the apartment house as is the borough of Manhattan, owing to its limited area, and its insular configuration; but a decreasing proportion of their middle-class population will be unable to afford the luxury of an exclusive roof.

Thus the apartment house has become an important type of American residence; and as it is destined to become still more important, an inquiry into its good and bad architectural tendencies has a great deal of interest. Neither is this interest diminished by the fact that the design of such buildings is rarely entrusted to the more prominent local architects. Out of the thousands of such buildings in Manhattan, the cost of which would range from $20,000 to $2,000,000, it would be hard to mention more than a score whose plan and appearance can be attributed to architects of more than local reputation, and the same is true of Chicago. The cause of this is, of course, obvious. These apartment houses are erected almost exclusively by speculative builders, and speculative builders cannot afford to employ architects with more than a local reputation. They cannot afford the commission; they cannot afford to spend money on the sort of refinements and embellishments upon which the leading architects may insist. The owner of a private residence wants a certain kind of house, and in order to get what he wants he is willing to spend money upon conveniences and adornments, which have no commercial value; but the builder of an apartment house has to suit an average taste by means of a house which is a profitable business enterprise. The buildings which he puts up, consequently, represent fairly the average taste of the community, and any money which is spent in giving such buildings propriety and comeliness is spent only and precisely because the builders have discovered that so much propriety and comeliness pays.

A residence which is built to suit the average taste, and is subject in its design to the severest business tests, is manifestly very much restricted in its opportunities for architectural success. It is useless to expect that its design can ever

be very carefully studied, or that it can obtain any peculiar distinction. It is not built to suit the taste either of an architect or an owner; it is built to satisfy the ordinary demands of people who can afford to pay a certain amount of rent. The design must, consequently, be conventional; it must conform to a common and popular type, and must in its chief characteristics be more or less taken for granted by its architect. The important thing is, consequently, that the convention should be a good one; and any architectural appraisal of apartment houses must turn fundamentally upon the excellence of the convention they embody.



DIDER BUILDING.

50th Street and Grand Boulevard, Chicago. Henry L. Newhouse, Architect.

(Photo by Henry Fuermann.)

The excellence of the convention which a typical apartment house should embody will depend upon the frankness with which it expresses the purpose which it serves, and the conditions which it satisfies. These conditions absolutely forbid any attempted display. An apartment house is necessarily built of cheap materials, and the effort to carry out an ornate design in cheap materials always results in bad taste. The discrepancy between pretentiousness of the design and the cheapness of the materials merely emphasizes the cheapness of the building. It proclaims the fact that the building is trying to be something which it is not, and can never be, whereas the whole object of a good convention should be to make the building appear to be what it is. An apartment house which appears to be what it really is must necessarily be simple and unpretentious in design; and whenever it is made simple and unpretentious in design the cheapness of the materials, instead of giving the building away, may really add to its effectiveness. Just how far the simplicity and unpretentiousness of the design must go will, of course, depend upon the general character of the city, and its standard of architectural display. In Paris, for instance, the pervasive metropolitan gaiety of the city and the general taste for buildings which are both well constructed and elaborately designed, demand a good deal of architectural display—very much more than would be demanded under different surroundings. In Paris a severely simple

apartment house would look affected, whereas in Chicago an apartment house that sought to live up to the Parisian standard would look even more conscious of the impropriety of its appearance. Thus the standard varies, but the purpose remains the same; and that purpose is to keep the conventional type of apartment house as simple and unpretentious as the prevailing standard of architectural taste will permit.

In another respect, also, the typical apartment house can obtain a certain amount of propriety, and that is, by conforming to some appropriate tradition of residential architecture. An apartment house should be made, so far as possible, like a building in which it would be pleasant to live. It should wear a domestic aspect. It should suggest the privacies and the seclusion of Anglo-Saxon domestic life. This suggestion should not be over-emphasized, because the exclusive possession of his own home which the tenant of a flat enjoys, is, to say the least, somewhat qualified. It is a species of promiscuous exclusiveness. Nevertheless an apartment house *is* a type of residential building, and should, so far as possible, suggest its domestic function. Of course, an apartment house which is built from twelve to twenty stories high, and accommodates a few thousand people, has become such an hospitable residence that its private domestic character has largely disappeared; but such buildings are exceptional. The average apartment house accommodates from ten to forty families, and can present a valid claim to a share in the domestic proprieties. In Paris such a claim means no special sort of architectural effect, because the design of French residences has always expressed the social rather than the exclusive domestic spirit; but Americans are English rather than French in the traditions of their residential building. The apartment houses erected in London have always preserved a positive and even a rigorous domestic character; and there are good reasons why the presentation of a similar appearance to the public will add to the excellence of the prevail-



THE LESSING.

Surf and Evanston Avenues, Chicago. Edmund Krause, Architect.

(Photo by Henry Fuermann.)

ing type of American apartment house. If the architectural excellence of our American apartment houses consists chiefly in being simple in design and unpretentious and domestic in effect, the quality of excellence must assuredly be denied to the average apartment house in New York City. This type of building is neither simple nor unpretentious nor invitingly domestic. It is rarely very ornate; but it is just sufficiently ornate to spoil its simplicity. Many of them look as if they wanted to be domestic, but did not know how. The truth is, that the six-story New York apartment house is architecturally a hybrid. In design and construction it is unworthy of the value of the land on which it stands, and the metropolitan character of the city in which it is situated. It seeks to be architecturally worthy of its opportunities and surroundings by making certain feeble and meaningless attempts at display; but the manner in which the erection of these buildings is financed condemns them necessarily to being either vulgar or commonplace. They are built by men who have almost no money of their own, who are living on borrowed capital, and who have to pay such high prices for their land, their loans and their materials that the making of any profit at all is both difficult and precarious. Under such conditions, the building itself has no chance of any kind of excellence, for the construction will be scamped just as far as possible, and the "architecture" will become a matter merely of trivial and inappropriate terra cotta ornament. New York's apartment houses will never embody a decent architectural convention until higher standards of construction are enforced and better methods of financing prevail. Under present conditions the builder cannot put up an honest building. All the profits go to the money-lenders, and the builder, who, if he had a little capital of his own, could erect a better structure for less money, is too much preoccupied with saving his skin to think of putting up even as good a building as he can. It is a sad fact that the thousands of six and seven-story apartment houses which have been erected in Manhattan during the past fifteen years, instead of giving the city a substantial and interesting appearance, have only tended to make it look either ugly, commonplace or trivial.

The apartment houses which are being built in the cities of the Middle West conform to a much better convention than do those of New York. No doubt the conditions are more favorable in these Middle Western cities. Land is cheaper. The buildings are lower. They are, as a rule, less expensive to construct. A builder can erect them on a smaller capital without staring bankruptcy in the face during every phase of the operation. The methods of construction used in the Western cities are not any better than those used in New York. Indeed, in many cases they are worse. But it makes less difference, because the buildings are lower and are less tightly crowded together. On the whole, one gets the impression that the Western apartment houses are built in order to supply pleasant residences for people of some taste, whereas the New York apartment house is the victim from start to finish of conditions which force their tenants merely to take what they can get. The tenant really has no choice. He is obliged to put up with small rooms, with poor air, and very little sunlight, and with an utter absence of solid comfort in his domestic surroundings, because he cannot afford to pay the money and the time which may be necessary to obtain these benefits. But the resident of the Western city is less the victim of his economic environment. He still has rights left, which the builders of apartment houses are bound to respect.

Eastern readers will understand what we mean by considering closely the examples of the apartment houses recently erected in Chicago, which are reproduced herewith. These houses are not published because they are extraordinary pieces of architectural design. They are published because they are typical of the better class of apartment house now being built in Chicago, and because, although they are typical, they really look like pleasant and appropriate places in which to live. They prove that, in Chicago at least, the tenant of a flat can retain many



LESSING ANNEX.

Evanston Avenue, Chicago. Edmund Krause, Architect.

(Photo by Henry Fuermann.)



NORMOND COURTS BUILDING.

Lake Avenue, near 47th Street, Chicago.

(Photo by Henry Fuermann.)

Henry L. Newhouse, Architect.



THE COURT—NORMOND COURTS BUILDING.

Lake Avenue, near 47th Street, Chicago. Henry L. Newhouse, Architect.

(Photo by Henry Fuermann.)



THE PATIO.

51st Street and Cottage Grove Avenue, Chicago. (Photo by Henry Fuermann.) Henry L. Newhouse, Architect.

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GEORGIAN COURT.

(Photo by Henry Fuermann.)

55th Street and Indiana Avenue, Chicago. Bortz & Hetherington, Architects.

of the advantages which in New York belong almost exclusively to the owner of a private dwelling. He can obtain space, air, light, a court in which his children may play, green grass and flower beds, and a habitation which looks like the residence of refined and civilized people. The builder of an apartment house in Chicago is obliged really to compete with the builder of private residences. He has to make the living accommodations he offers as pleasant in appearance as a tenant could obtain by the purchase of a house of his own, because such a tenant could obtain a house for a comparatively small increase of rent. In New York, on the other hand, there is practically no competition between the apartment house and the private dwelling. A man who wants to live in the city and who cannot afford more than a certain amount of rent *must* take an apartment. His only alternative is to live much farther away from his place of business in practically suburban surroundings. The consequence is, that the ordinary New York apartment house is a feebly pretentious tenement or barracks, while an apartment house of the same class in Chicago looks like a place in which people might want to live, instead of a place in which they had to live.

Of the eight apartment houses in Chicago reproduced herewith, six of them are only three-story buildings; and it is, of course, obvious that it is much easier for an architect to make a three-story building look domestic than it is for him to give a similar character to a building six or more stories high. The architects of all but one of these low buildings have used this advantage to the utmost. They realized that the most appropriate tradition in which to design their buildings was in that of some collegiate style, and four out of these apartment houses are collegiate analogous to Gothic, while the fifth is what may be called collegiate Georgian. The second of these styles seems to serve quite as well as the first, and there can be no doubt the effect of their use is to rob the apartment house of many of its terrors. These buildings emphatically look as if people of refinement and taste might prefer to live in them, as being every bit as dignified as a private house, and probably even more pleasant and convenient. One can understand that the occupants of such a building might become attached to their dwelling, and that they might keep on living there because of the pleasant associations which have gathered around their abiding-place. They are calculated to give an additional value to domestic life, instead of depriving it, as so many New York apartments do, of all dignity of appearance.

It will be noticed that all but one of these lower buildings are arranged around courts so liberal in size that even the rooms on the bottom of the court obtain an abundance of light and air. It is, of course, these courts which give the buildings their character, and it will be noticed that several of them, in the English fashion, derive their names from this characteristic. These enclosures are, in every case but one, shut off from the street by a grille, which in itself gives an additional flavor of privacy; and their dimensions are so spacious that they are not merely wells, but enclosures, which really give scale to the walls by which they are surrounded. The design of such a house is really an opportunity which might stimulate an architect. Neither are the buildings themselves wanting in the evidences that their designers have spent some time and care upon them. Look, for instance, at the ironwork on the balconies of the "Alvah," on Drexel Boulevard; mark the simple and thorough design of the house at Fifty-first Street and Cottage Grove Avenue; and note in all the buildings the general prevalence of good taste and the propriety of the ornament. The standard of design is very much higher than it is in the case of the ordinary private house; and while the details of the façades will not bear analysis, there is no reason why they should be subjected to such a test. It is an extremely encouraging fact that buildings such as these are being erected by speculative builders in response to an ordinary commercial demand. With the exception of a few private houses in New York, we do not know of any architectural work in the country which



THE ALVAH.

45th Street and Drexel Boulevard, Chicago.

(Photo by Henry Fuermann.)

Andrew Sandegren, Architect.

springs from a similar source and is anything like as good.

It must be remarked also that the effect of domestic privacy which these low buildings give is not wholly an illusion. As a matter of fact, the tenants of apartment houses built around courts do have much more privacy than the tenants of buildings which rise higher from a smaller area. Every apartment house with an elevator is determined in its plan by the existence of the elevator. There can be only one entrance hall, and the whole population of the house must travel in the elevator and use the hall. But these low three-storied buildings have several entrances, each of which serves in all probability not more than six apartments, so that in this manner a tenant is much less likely to be jostled and annoyed by unsuitable neighbors. The building loses in every respect the character which it inevitably obtains in New York—the character of being a tenement; and it is very much to be hoped that in New York attempts will be made to erect similar buildings on the cheaper land in the Bronx now being opened for settlement.

There is one of the three-story apartment houses illustrated herewith, which does not deserve as much approval as do the others. The Dider Building, at the corner of Fiftieth Street and the Grand Boulevard, belongs to a different and a much less admirable class. Its plan is different, because the exterior court, which is the dominant feature of the other buildings, becomes in this instance an interior court, and consequently sinks into the architectural and social insignificance of a back yard. And this alteration in plan brings with it a complete alteration in style and in effect. The English tradition is dropped, and a French model substituted for it; and this change has meant an increase in ornament, both in scale and in amount, and in general a much more showy character. Given the style, the architect has not done his work badly. The design shows the influence either of a Beaux Arts training or else of a facile talent for imitating the results of that training. But there can be no doubt that it embodies for the purpose of such buildings a dangerous rather than a promising convention. It is not simple. It is not unpretentious. Instead of being domestic in feeling, it is plainly and painfully conscious of its public appearance. The scale of the design is too big and too showy for the size of the building or for its materials. A four or five-story structure, built entirely of stone, would have some chance of success when designed in this fashion; but a three-storied structure, which is largely brick, is merely an architectural lamb strutting about in the skin of a lion. The front on the avenue puts up as brave an appearance as possible, but the frontage on the street becomes a brick wall with some tedious and irrelevant stone trimmings. The body of the lamb shows plainly through the rents in the lion's skin. A comparison between this and the other three-story buildings is an admirable object lesson in the difference between the wrong and the right way of designing this size apartment house.

In addition to the lower buildings, we give illustrations of two higher apartment houses, one of which contains six and the other nine stories. These buildings cannot, of course, obtain the pleasant domestic atmosphere which characterized the structures with three stories, but they none the less belong to a better convention than that which prevails for buildings of the same height in New York. They both of them have exterior courts which are tolerably spacious, and which are shut off from the street by iron grilles. They both are simple and unpretentious in design. The architect who is responsible for these two designs has spent his ingenuity in securing as much sunlight for the tenants as he could, and the bay windows used for this purpose have merely been used to emphasize the vertical lines in his façades. In all other respects the appearance of the two buildings is plain even to bareness; and this plainness is their greatest merit. The one thing that an architect should try to do is to get his employer to use a good colored brick, for a pleasant mass of colored material constitutes his best chance to make his building attractive.

The Architect and the "Arts and Crafts"

Architecture has often been called the mother of the arts. An English architect, however, has traced its development from its earliest beginnings to the building of the largest Gothic cathedral, and has endeavored to show that it is also the vigorous grown-up child of the arts and crafts.

When primeval men first began to make tools—the stone hammers and hatchets of the cave-dwellers—they tried to express their impressions of the wonders of nature about them by adorning their tools with natural objects and images. Working thus, they were crude craftsmen. Further along in the evolution they made rude shelters with their tools, and still later they tried to shape these shelters into pleasing forms and to adorn them—when appeared the first rudiments of architecture. Finally, when buildings became more pretentious and their construction more difficult, a master-craftsman was needed, and the architect appeared. Now, the present-day architect, when he is of the right kind, is a master-craftsman as he was of yore, but he has wandered far from the position of the great cathedral builders, and it is the intention of this paper to consider him in his relation to the arts and crafts of to-day.

The term "arts and crafts" is one of somewhat indefinite meaning. From the constitution of one of its first societies organized in this country, we learn that it represents no particular type of architecture, and it should therefore interfere with neither the followers of the academic school in architecture nor with individualists. It stands for simplicity and sincerity in design (of whatsoever kind) and for what has been termed "the idiomatic use of materials" (i. e., the design and manufacture of leaded glass in a leaded glass way; the design and construction of wooden structures in the way called for by wood, and so on). It also stands for the aim to incorporate in one individual as far as possible the designer and the workman in products of craftsmanship, rather than for the factory method, which results in the workman, becoming a part of a machine whose interest does not accompany the design of the thing he is making. This last aim is the one that is the most indefinite, and upon which undesirable construction is sometimes placed, and from which wrong conclusions are sometimes drawn. For instance, the president of one arts and crafts society condemns one of the best architectural firms in the country, not because he considers their work poor, not because he does not appreciate its high quality, but because they are a large firm and their work is accomplished by means of the co-operation of many individuals of different aptitudes working together. They should themselves oversee it all, he says, and their good results have not been accomplished by means of praiseworthy methods.

Now, when the early architect developed from the primeval master-craftsman, he ceased to deal solely with the implements of his former trade; the men working under him also concerned him; and finally, as his work increased in quantity, the direction of those men became a very important part of his work. Later on, when he assumed the responsibility of suggesting the forms buildings should take (in other words, when he began to make plans), a study of the widely varying building requirements of men, and the best means of satisfying them, likewise became a prominent factor with him. During the last few decades such innovations as steel construction and the elevator (which together resulted in the tall office building), steam heat, scientific ventilation, electric light, etc., have made building requirements so exceedingly complex that the present-day architect, working alone, cannot possibly compass them with entire efficiency. He must devote so much of his time to familiarizing him-

self with the mere *affairs* of men, in order to arrive at the exact nature of their architectural needs, that he is forced to divide his work and to specialize. The architect who designs, makes all his own details and does all his own supervising, works in the methods of the past. The modern man is none the less efficient, but he is more of an overseer and less a craftsman—or rather, his craftsmanship more largely consists of the overseeing of the work of other craftsmen. The most successful architects to-day are those who have united with others whose abilities supplement their own in forming combinations of higher efficiency than would be possible were the same work attempted by one man. In the few instances of men who have not thus united, but are conspicuously successful, they will be found to have accomplished a similar organization among the members of their office force; and it is becoming more and more common to find the names of some of such members represented in a subordinate way on the letter-heads and office doors of principals.

This co-operative method is not mere commercialism, as some seem to believe; it is co-operative fellowship, the better fitting of each man to his place (practical socialism, if you like). Many theorists, who favor more individualistic methods, resist it, but, as the outcome of increased necessity for concentration and specialization, it has surely come to stay and will ultimately accomplish the very end they wish to see brought about.

As the work of the modern architect has thus become more and more specialized, he has, at the same time, been drifting away from his former intimate touch with the work of craftsmen.

The architect who nowadays is called upon to express an opinion regarding real estate or rental values, steel construction, reinforced concrete, or the proper distribution of heat, light, or fresh air, finds it a considerable jump to transfer his interests at once to the aesthetic value of different treatments of wood for interior finish, or the technical excellence of craftsmanship in different makes of furniture. If he concentrates his study on the one, either his interest in the other lags, or the value of his opinion regarding it becomes impaired.

A familiar acquaintance with modern principles of construction, the complicated practical affairs of business, and also a fine feeling for aesthetics, is a good deal for any one man to compass. By the combined personnel of its office force, however, the modern successful architectural firm does compass all of these activities. In covering so broad a field perhaps it may be pardoned when it fails to preserve that more intimate acquaintance with the work of the allied arts that once existed. How to restore this desirable intimacy and still retain thorough efficiency in all departments is a question the solution of which has been attempted in various ways.

Co-operative arrangements, starting with the craftsman as their head instead of the architect, have been tried. There are now decorators, and there are also construction firms in New York (and fortunately a few elsewhere in the country), who undertake architectural work, engaging an architect for the purpose, his authority being subordinate to theirs. This does not accomplish the end in view. Decorators are not apt to be masters of crafts other than their own, and therefore are apt not to be competent to direct them. An architect is primarily an agent, who undertakes to plan and to build for his client that which his client could not himself plan and build as well, and when the larger part of his training has been along the lines of decoration or of some one of the other crafts supplementary to architecture, he is not properly equipped for his calling. Furthermore, the architect's position, when employed by a decorator, is untenable, for he loses his place as the professional adviser of a client, and becomes the hired man of a contractor. The quality of the service obtained from any one who would be willing to assume such a position is therefore as questionable as that now secured from craftsmen under the conditions we deplore. The architect must be at the head in all attempts to bring his work and that of

craftsmen closer together. All such attempts should begin on the working basis of the co-operation of an architect's office with a practical (but not with a visionary) craftsman's shop.

The foregoing has been in the nature of criticism. The following is intended to assume lines of definite constructive suggestion.

We now have in some part of every large city men who make furniture or who handle different kinds of tile for fireplaces. Elsewhere are the manufacturers of leaded glass, the dealers in fabrics and other decorative surface coverings, and in still other parts of the city are the exhibit rooms of the brick makers. Each of these men has products of his craft to show that are of interest not only to architects, but to every man who builds. When an architect discusses the question of tile for a fireplace, or of furniture, with a client, he now frequently finds it necessary to send his man a considerable distance in order to have him see their goods, and sometimes he has to accompany him. Time is thereby lost, and as time during business hours is a precious consideration with most men, such visits are frequently neglected, both architect and builder thereby losing touch with the craftsman. In our larger cities, there are some firms who make it their business to handle the products of all crafts; but it is unnecessary to argue that the concentration of many crafts within one business enterprise can not result in the same degree of individual excellence that is obtained when each craft is handled separately. The former method removes the workman and his craft too far from both the architect and the builder (or person whose interest he chiefly serves) for the best results.

Were the offices of individual craftsmen brought into closer proximity with each other, however, and with those of architects, one desirable point would be gained. If we had in the centers of our cities, for instance, buildings whose offices were occupied quite exclusively as the exhibit rooms of workers in metal, leaded glass, tile or hardware merchants, brick manufacturers, etc., not only would those who build have a much better opportunity to reach them, but architects as well could thereby much more conveniently keep in touch with their work. In the heart of one of our large cities, and within easy reach of the principal architects' offices, a certain firm of brick merchants has an exhibit room that is a model of its kind. There are to be seen there not only samples of every kind of brick procurable in that locality, but each kind is laid up in mortar with struck joints, so that one may judge of its varied effects when so laid. In many cases the same brick is laid up with different colors of mortar, and with different methods of striking the joints. The result of this scheme for exhibiting their goods, and of the proximity of their exhibit rooms to architects' offices, has been not only that architects frequently visit them with their clients, but that this firm has secured practically the entire special brick business of the city.

The writer has no fault to find with the good work now being done by the various arts and crafts societies throughout the country, but he thinks their scope should be wider. Their membership might well embrace all the trades people whose goods are used in the process of building: hardware men, for instance, brick manufacturers, roofing material men, etc. Of course, there would not be enough of interest in a monthly meeting to bring men of such widely different interests together, but an annual or semi-annual meeting might be held to very good advantage. At such times, addresses could be made and papers read, by which the different points of view could be obtained. Exhibits could also be displayed, which would enable the work of various contributors to be compared and criticised by architects, craftsmen and the public.

It has been contended by some craftsmen that the work of hardware manufacturers and brick makers is too far removed from that of arts and crafts societies to make such a scheme feasible, that the former savor too much of the commercial. But for the general welfare of aesthetics, it is quite as important that well-designed and well-executed

hardware enter into the construction of buildings as that some particular piece of furniture be hand wrought. It would be well were some craftsmen to come down from their points of vantage in idealism now and then and search for the element of beauty among some of the common objects of commerce.

In the city of Milwaukee there was annually held, for a number of years, an exhibition by manufacturers, irrespective of their connection with each other, or with any particular common interest, and the exhibition was found to be profitable. The idea is that of a world's fair brought down to a city's dimensions. Were exhibitions of a similar nature, but consisting of only such products as have to do with building, more often held in our cities each year, and were they accompanied with addresses by tradesmen, craftsmen and architects, another step toward a closer relationship between architects and craftsmen would be accomplished. It has been contended by one craftsman that such conditions, though unquestionably desirable, belong more properly to the sphere of tradesmen. But our friends who call themselves craftsmen must admit that in the end, if their craft is to live, in addition to being craftsmen, they must necessarily also be tradesmen. Such exhibitions would be sure to attract many people outside of the building trades, among those who are interested in architecture purely as an art or means of added culture, and they would thus not fail to influence widely the taste of whole communities.

The American Institute of Architects has appointed a committee of five of its members to discuss the present situation of the applied arts and the art of architecture, and to endeavor to discover what can be done toward restoring the closer relationship that once existed between them.

To sum up, inventions and discoveries during recent years have greatly complicated the practice of architecture and have tended to divorce it from the work of the allied arts. In order to correct these tendencies, the desire of many is toward some sort of a simplification of the methods of either architects or craftsmen, or both. Now, simplification is the end desired, but attempts to secure it should consist not in trying to turn back the hands of time, but in endeavoring to readjust new relationships. Modern inventions, with the increased complexity they occasion, have come to stay, and the task that confronts us is that of discovering how our business practices may best be modified to conform to them. It is the modification of our business methods, not an inversion of the new conditions of life, that will bring about simplicity.

Not by a return to former methods, either of architectural practice, or of craftsmanship, is a closer intimacy between them to be secured. It is to be obtained by means of readjustments which recognize, on the one hand, the necessity of specialization and individual concentration, and, on the other, the value of combination and co-operation.

Elmer Grey.

Prudential Assurance Company's Building

LONDON

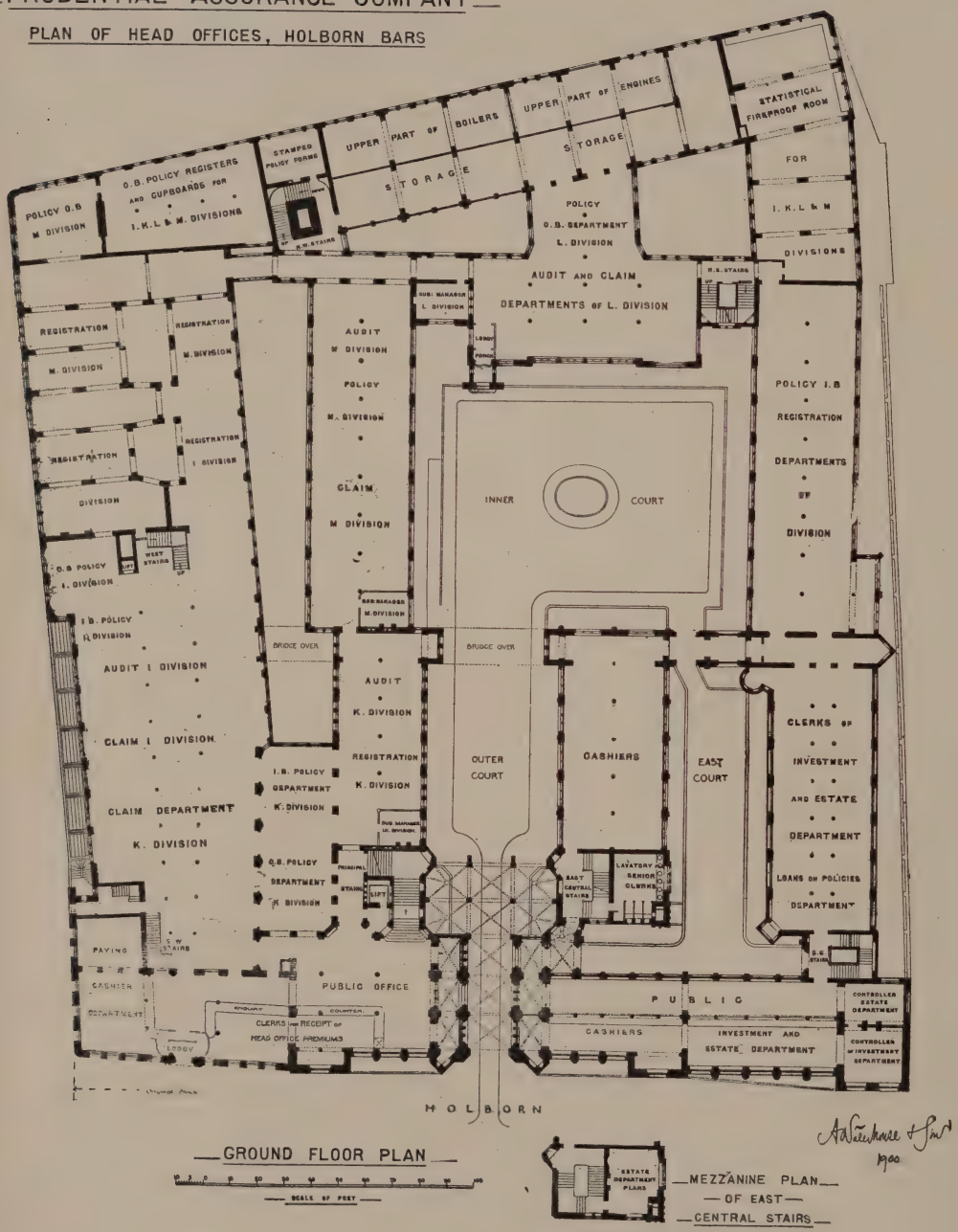
Most Londoners and many travellers, especially Americans, are familiar with the old houses in Holborn, still known as Staple Inn. They owe their preservation to the public spirit of the Prudential Assurance Company, whose recently completed offices on the opposite side of the road have gradually absorbed the site of another ancient Inn of Chancery, namely, Furnival's. Both groups of buildings may be described as Gothic—the former belonging to that last phase of domestic Gothic which, no longer shackled by necessities of defence, consists largely of broad rows of mullioned windows between horizontal bands of timbering and plaster; the latter that latest phase of revived Gothic which, employing ironwork, concrete, terra cotta and glazed bricks, yet clings to the mediaevalism of crisps and crockets.

The first portion of the new offices was begun in 1877 at the corner of Brooke street, a thoroughfare named after Fulke Greville, Lord Brooke, servant of Elizabeth, counsellor to James I. and friend of Sir Philip Sydney. Murdered here in his own house by his valet, his name was perpetuated in Brooke street and Greville street adjoining. The company's premises cover the site of his mansion and also the house of one Salkeld, to whom Lord Chancellor Hardwicke was articled in 1705, and whence he was sent daily to Covent Garden Market to buy Mrs. Salkeld's vegetables. The house where Chatterton committed suicide was pulled down for the company in 1880. The poet Savage was born in a court close by, his mother, probably the Countess of Macclesfield, wearing a mask at the birth to conceal her identity. The site of an old coaching inn was absorbed in 1899, as well as that of the Tun of Chancery, to which reference has been made. This Tun was originally the town house of the Lords Furnival, hence the derivation of the name. Sir Thomas Moore was Reader here for three years. Rebuilt by Inigo Jones and again in 1848 fresh associations soon arose. Charles Dickens was residing here when visited by Thackeray desirous of illustrating "Pickwick." Here the novelist places Traddles' chambers in "David Copperfield"; here John Westlock entertained Tom and Ruth Pinch; here also Mr. Grewgious conducted Rose Bud to spend her first night in London, assuring her that "Furnivals is fireproof, and specially watched and lighted."

The total area of the site now covered by the company's chief office is about 12,250 sq. yds. or some 2½ acres, thus probably exceeding that of any insurance building in the world. It has been in course of erection during 25 years, the first portion from the designs of Mr. Alfred Waterhouse, R. A., the main extensions in conjunction with his son, Mr. Paul Waterhouse, F. R. I. B. A., and the final internal finishings from the designs of the latter solely. The building represents the latest and perhaps the last important effort of the Gothic Revival on its secular side in the Metropolis. If it is regarded as a successful vindication of the adaptability of that style to modern commercial purposes it is partly due to the fact that the architects have throughout made traditional features subservient to the dictates of modern requirements. Mere mediaevalism has no place as such, and if the building has less interest than one in which a modern conception is embodied throughout, as in the new Gare d'Orleans in Paris, or one in which an ancient idea is revived and adorned with fresh detail, as in Westminster Cathedral, it at least has greater claims upon students of architecture than many beautiful reproductions of dead styles. The extensive use of terra cotta, faience and steel in itself suggests a due recognition of modern conditions—the acids and dirt in the atmosphere of a great city, the possibility of diminishing the dangers from fire and the desirability of few internal walls and piers caused by the great value of land.

PRUDENTIAL ASSURANCE COMPANY

PLAN OF HEAD OFFICES, HOLBORN BARS



GROUND FLOOR PLAN

SCALE OF FEET

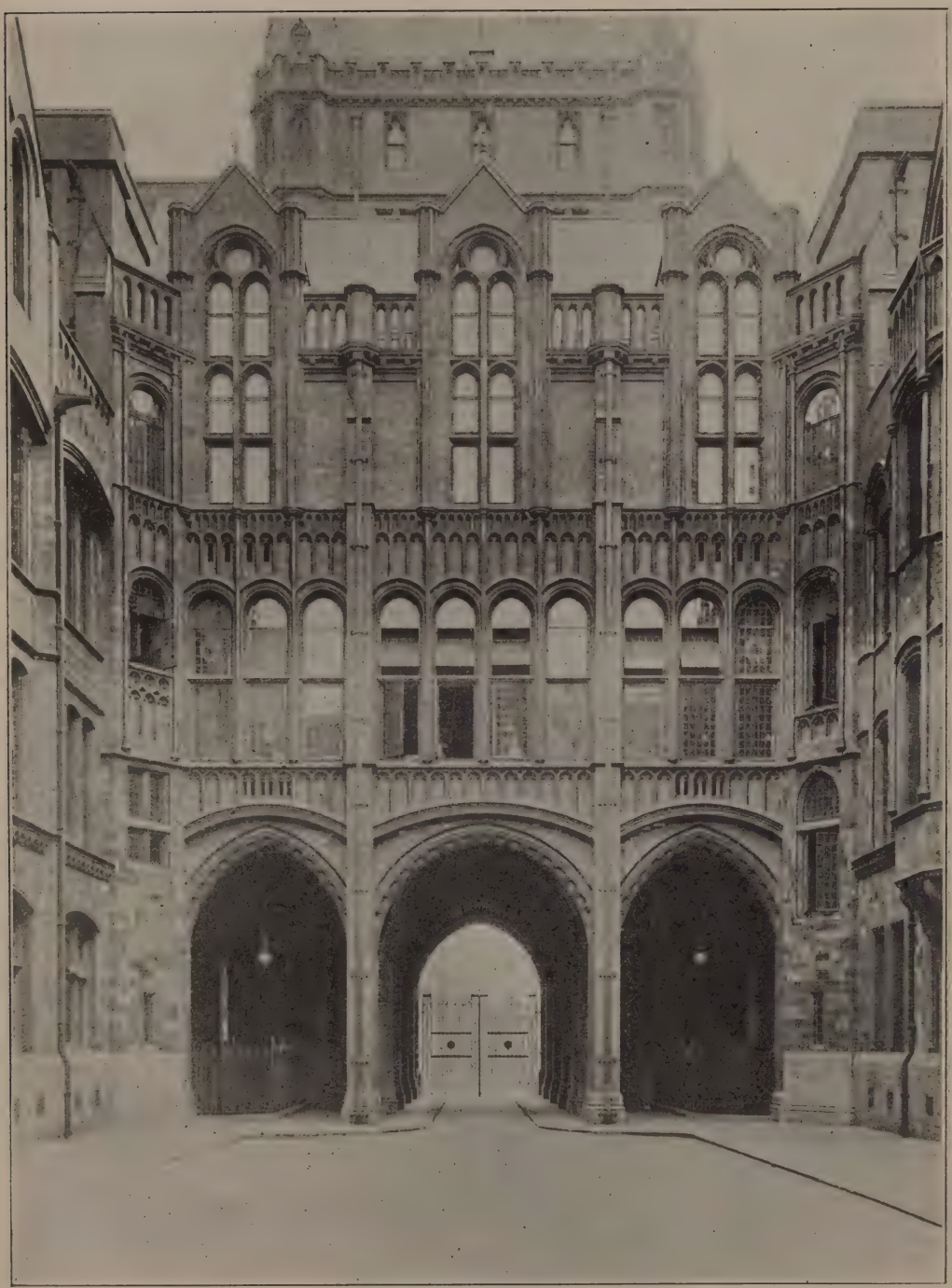
MEZZANINE PLAN OF EAST CENTRAL STAIRS

A. & V. Zeitschrift & Sons 1900



ELEVATION TOWARD HOLBORN—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

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OUTER COURT, LOOKING TOWARD HOLBORN—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.

Holborn Bars, London. A. Waterhouse & Son, Architects.



VIEW IN THE INNER COURT—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

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BRIDGE BETWEEN OUTER AND INNER COURTS—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.

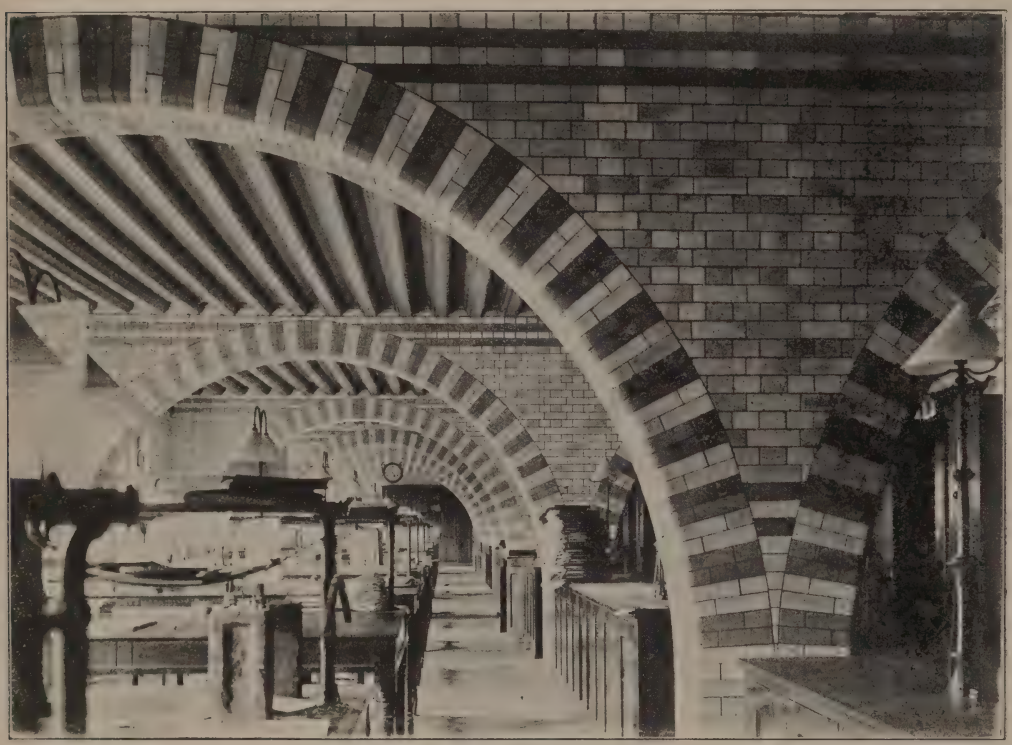
Holborn Bars, London. A. Waterhouse & Son, Architects.

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THE TOWER FROM THE NORTH—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

In judging the plan it should always be borne in mind that, farseeing as the founders of the company were in many respects, they could scarcely have imagined that within the space of a single generation the names of 1 person out of every 4 within the United Kingdom would be upon their books. Although the architects have ultimately covered an entire block, it is but seven years since the last portion of the site was acquired. Consequently the arrangements of the plan are less symmetrical and less consistently spacious than might otherwise have been the case.



VIEW IN THE NORTH BLOCK, SHOWING A CONCRETE FLOOR CARRIED ON "IRON DECKING"—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

The building presents frontages to Holborn of 310 ft., Brooke street 316 ft., Greville street 310 ft. and Leather Lane of 400 ft. A vaulted carriageway from Holborn affords approach to the outer court, and thence beneath a bridge carried upon an arch of 38 ft. span to the Inner Quadrangle (104 x 96 ft.), while access is provided from both to a narrow East Court. Other lighting areas have been formed, one of which on the west is 250 ft. long, but is crossed by a bridge.

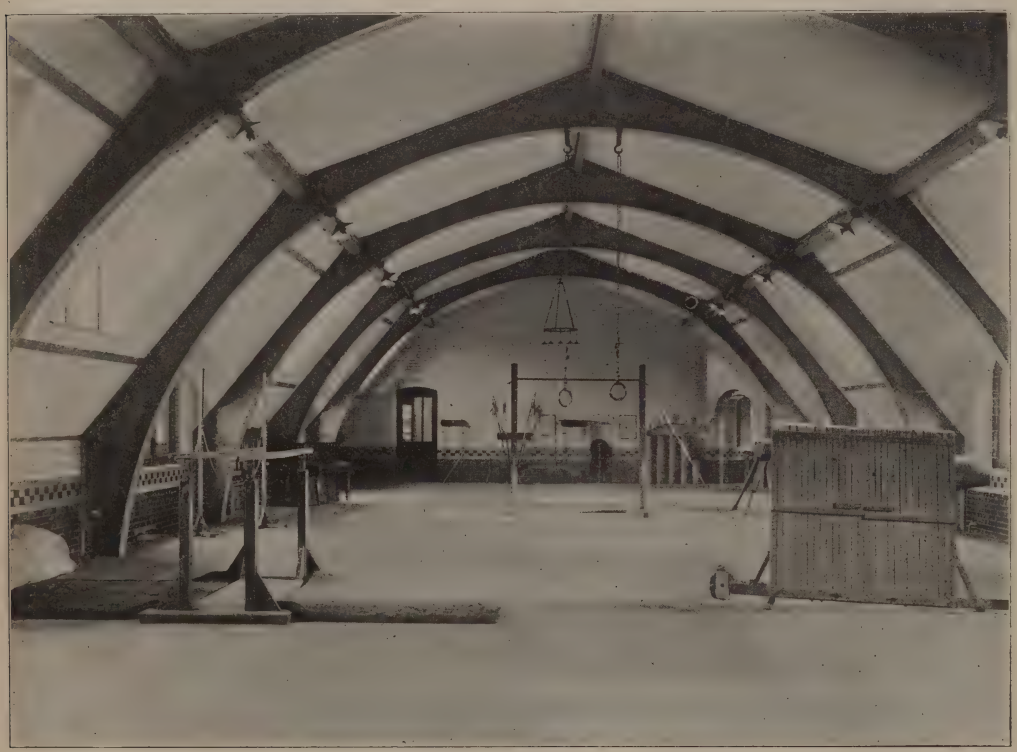
The public offices and rooms of the principal officers look out upon Holborn. The basement is largely occupied by stationery stores, strong rooms, lavatories, boilers and engines, with a carpenter's shop under the Quadrangle lit by a skylight screened by shrubs. On the 3d and 4th floors are the kitchen, the refreshment rooms of the lady clerks, the library, reading room, recreation hall, gymnasium and other rooms for the common use of the staff. The remainder is mostly occupied by large open "clerk spaces" and by the eight staircases which go from the top to bottom of the building.

Electric current is generated in the basement for lighting and ventilation. The boilers have a nominal H. P. of 500 while the motors are capable of illumi-



CASHIER'S OFFICE—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

nating 10,600 16 c. p. lamps. The boilers and engines together occupy a space of about 9,000 superficial feet. The exhaust steam is utilized for heaters for lavatories and radiators throughout the building. Ventilation is provided for by electric fans, some of which are capable of extracting half a million cubic feet of air per hour. The draught from the boiler furnaces after passing three times beneath the water tubes is carried in a horizontal trunk to the base of a chimney shaft 136 ft. high—a shaft affording some interesting points of construction. Circumstances required that this stack and a staircase should be constructed between existing walls only 23 feet apart. The size of the shaft was naturally dictated by the requirements of the boilers, and it was found most convenient and economical to construct the staircase around an oblong chimney. Two things to be avoided were unequal settlement and consequent cracking of the steps, and the overheating of the inner staircase wall. To avoid the former the concrete steps are not built into the walls but rest upon solid corbels of terra cotta. To remedy the latter the fire-clay lining is carried up above the roof of the staircase (about 75 ft.), the 2¼-inch space behind it being connected with the air at top and bottom. The great heat of the flue naturally produces a powerful and constant current of fresh air within this narrow space and helps to modify the conduction of heat through the walls of the stack.



THE GYMNASIUM—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

The elevation towards Holborn would probably have displayed a simpler disposition of parts could it have been conceived as a whole. The five-storied block to the west represents the company's original premises in which the floor to floor heights are naturally less than those dictated by the larger apartments of the later extensions. By a balance of gables and retention of the old parapet level throughout the awkwardness of this vari-



THE LIBRARY—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

BOSTON PUBLIC LIBRARY

ation of floor levels is lessened, but the opportunity for the frequent repetition of similar bays between the central and angle features of the building was missing. The dignity of effect thus produced is well shown in the great town halls of Flanders and in some other works of Mr. Waterhouse, notably the Natural History Museum.

The main feature of the elevation is the tower, which is 100 ft. high to the parapet, and about 170 ft. to the top of the *flêche*. Moderate as these figures appear in American eyes, the tower forms a sufficiently imposing mass as viewed down to Holborn. It contains the board room, library and other rooms requiring fireplaces, consequently the two flanking chimneys were necessities imposed upon the architects. A lofty granite arch below gives access to the courts and offices within. It is surmounted by a statue of Prudence modelled by Mr. Bernie Rhind. The wrought iron gates have modelled roundels in bronze—Apollo Prudens and Prudentia, both by Mr. Onslow Whiting. A notable feature of this Holborn front is the frieze above the ground story upon which are displayed the arms of many of the provincial cities and towns where the company has branches. If these had been displayed in their true heraldic colors some relief would have been given to the unbroken red color of the façade.

Passing through the gates a vaulted vestibule on the left gives access to the principal public office, from which is approached the main staircase. The treads are of marble with very elaborate and varied *opus alexandrinum* mosaic on the landings. The walls are covered with glazed tiles and the ceiling panelled and vaulted in faience.

On the second floor is the board room, approached through an ante hall with a lofty oak roof and high double transomed windows. The board room itself is a smaller apartment richly panelled in oak and with fireplaces at both ends surmounted by carved canopy work. Portraits are let into the walls, the windows are enriched by heraldry and the floor is covered with a rich oriental carpet. The furniture here, as generally in the building, has been made from the architects' designs.

The expenditure incurred (nearly £600,000), the solidity of construction and the lasting character of the materials employed suggest that, what has been called "the blood red hand of Waterhouse" has left its mark on Holborn for many generations.

F. Herbert Mansford.



VIEW IN BOARD ROOM—PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Holborn Bars, London. A. Waterhouse & Son, Architects.

Manhattan Opera House

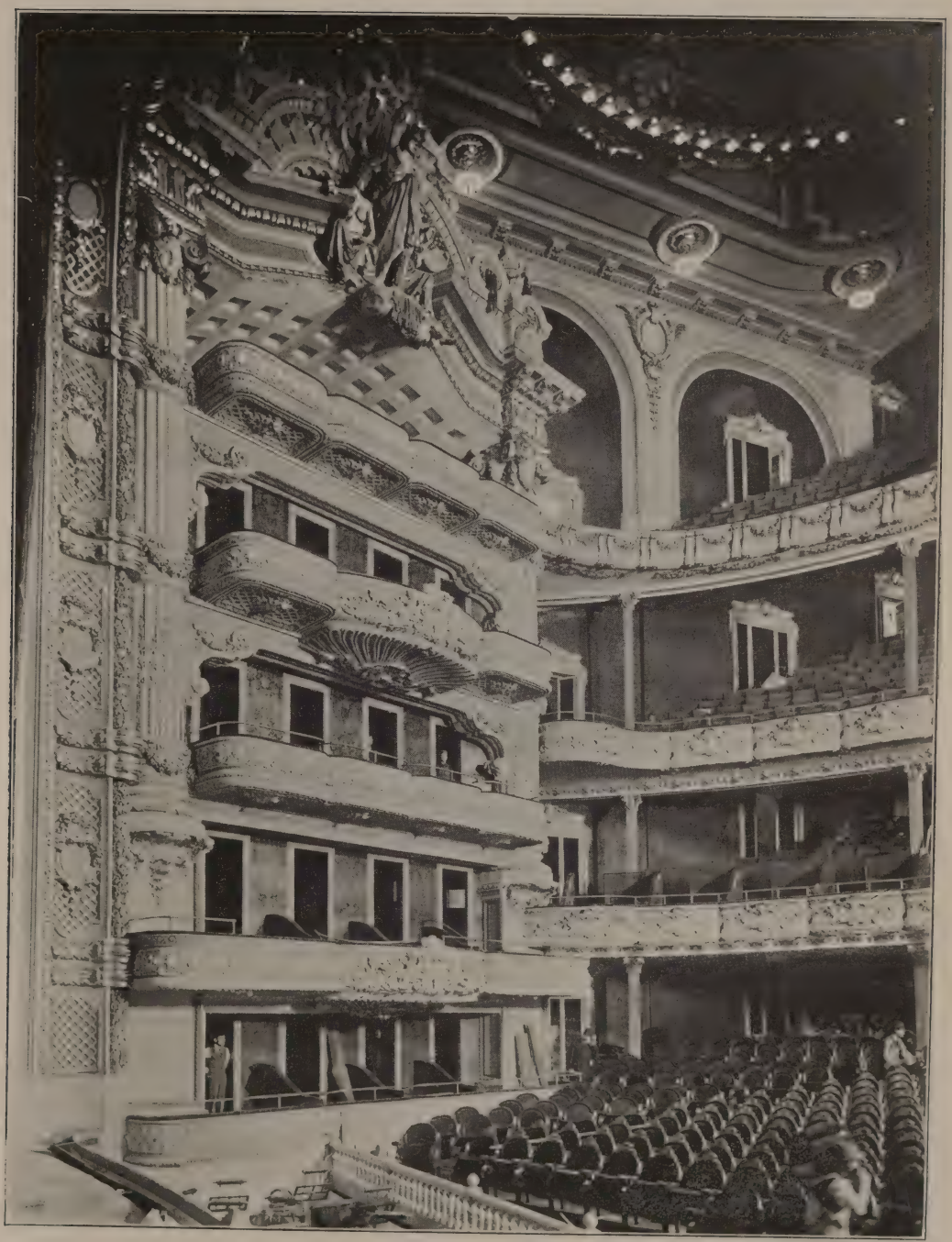
New York City

We reproduce herewith some interior views of Mr. Hammerstein's new opera house in West Thirty-fourth street, on which work was started some three or four years ago, and not without considerable misgiving on the part of people in musical circles. The scheme has been realized and it will now be for the public to decide whether or not New York is able to support two opera houses. Whatever the decision of the public may be the building will endure and presents, we believe, something of interest to the readers of the Architectural Record. In order to make the views more intelligible a few facts will be of service.

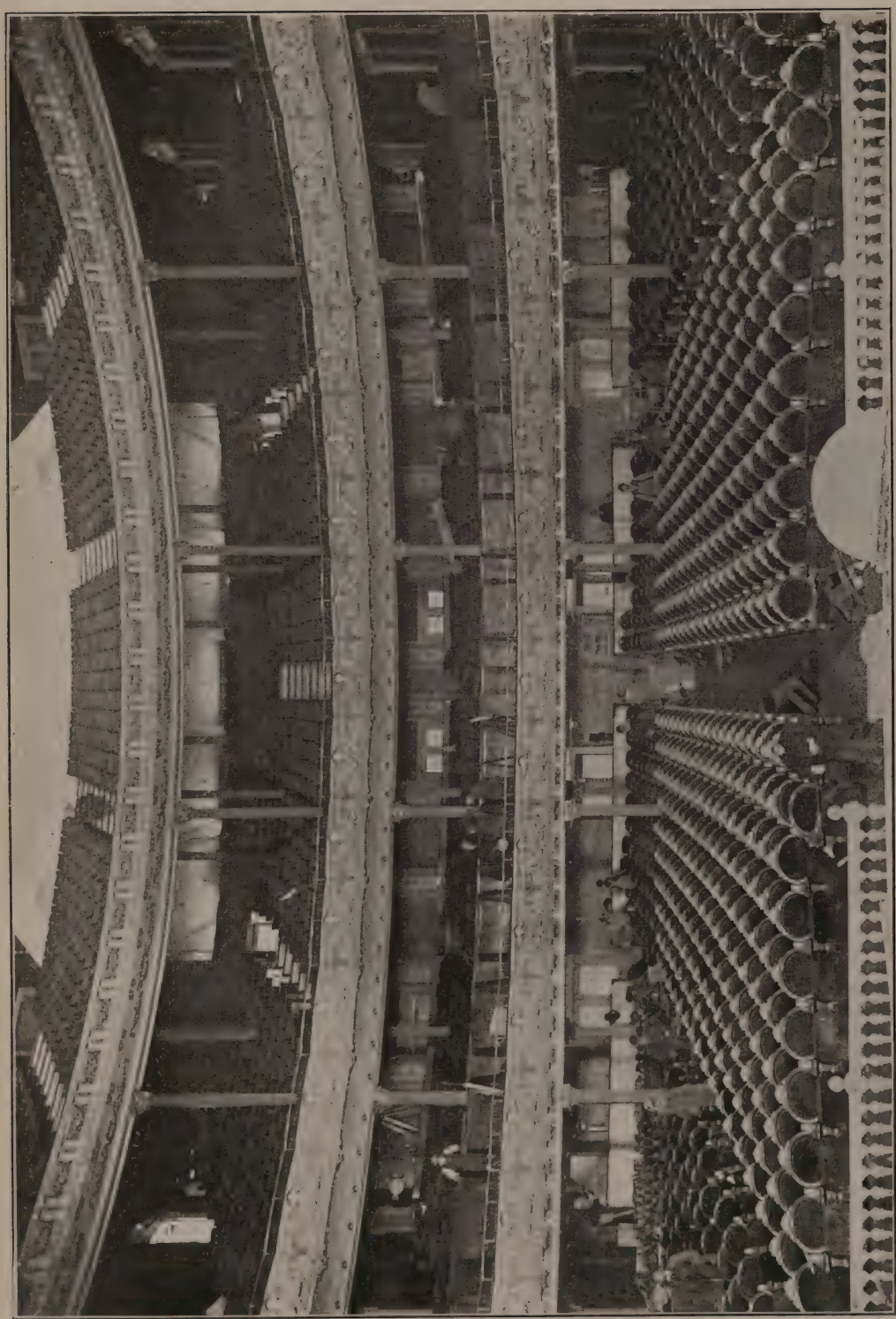
In point of seating capacity the auditorium, of 100 feet deep by 105 feet wide and 80 feet high, though larger than that of the Metropolitan Opera House, seats only about 2,700 persons as against 3,500 for the latter. The orchestra, in which the seats are unusually roomy, accommodates more than a third of the entire audience, and there are three tiers above, i. e., dress circle, balcony and gallery. The stage, too, is unusually large, being 70 feet deep and 125 feet wide and having a proscenium opening 47 feet wide and 53 feet high. These relations, it will be observed, give a well proportioned auditorium space and result in good sight-lines in almost any part of the house.

The color scheme for side and back walls of the auditorium is of a red which can hardly be called pleasing. The plaster decoration which is executed in prevailing tones of café-au-lait relieved by gold is more successful. An article on new theaters in New York published in the Architectural Record about two years ago pronounced the predominant mistake in interior theatre decoration to be its over-refinement. Of this fault the decorators of the Manhattan Opera House are certainly not guilty. On the contrary, the treatment in its boldness almost goes to the other extreme, and we think it would have been more successful if color had been given more predominance and the modeling been made not so bold. The ceiling, of which we give a vertical view, is very effective, but is marred by a coarse and unsuitable chandelier. The treatment of the boxes would be improved if one did not see so much of the red partitions which seem out of harmony with the plaster decorations of the adjacent features.

The mural painting is confined to the ceiling of the auditorium which is decorated with allegorical figures around the chandelier already mentioned and to a panel over the proscenium arch, a panel over 50 feet wide and about 18 feet high, upon which are depicted the operas before the shrine of the goddess Music, a composition containing over one hundred persons famous in the opera world. In this picture especially is the lack of color noticeable, and one feels that the artist has failed to properly avail himself of a splendid opportunity.



MANHATTAN OPERA HOUSE—VIEW OF BOXES FROM THE STAGE.
34th Street, between 8th and 9th Avenues, New York. Hammerstein & Denivelle, Decorators.



MANHATTAN OPERA HOUSE—VIEW FROM THE STAGE.

34th Street, between 8th and 9th Avenues, New York. Hammerstein & Denivelle, Decorators.



MANHATTAN OPERA HOUSE—THE CEILING OF THE AUDITORIUM.
Hammerstein & Denivelle, Decorators.
34th Street, between 8th and 9th Avenues, New York.

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MANHATTAN OPERA HOUSE—VIEW OF PROSCENIUM AND CEILING.

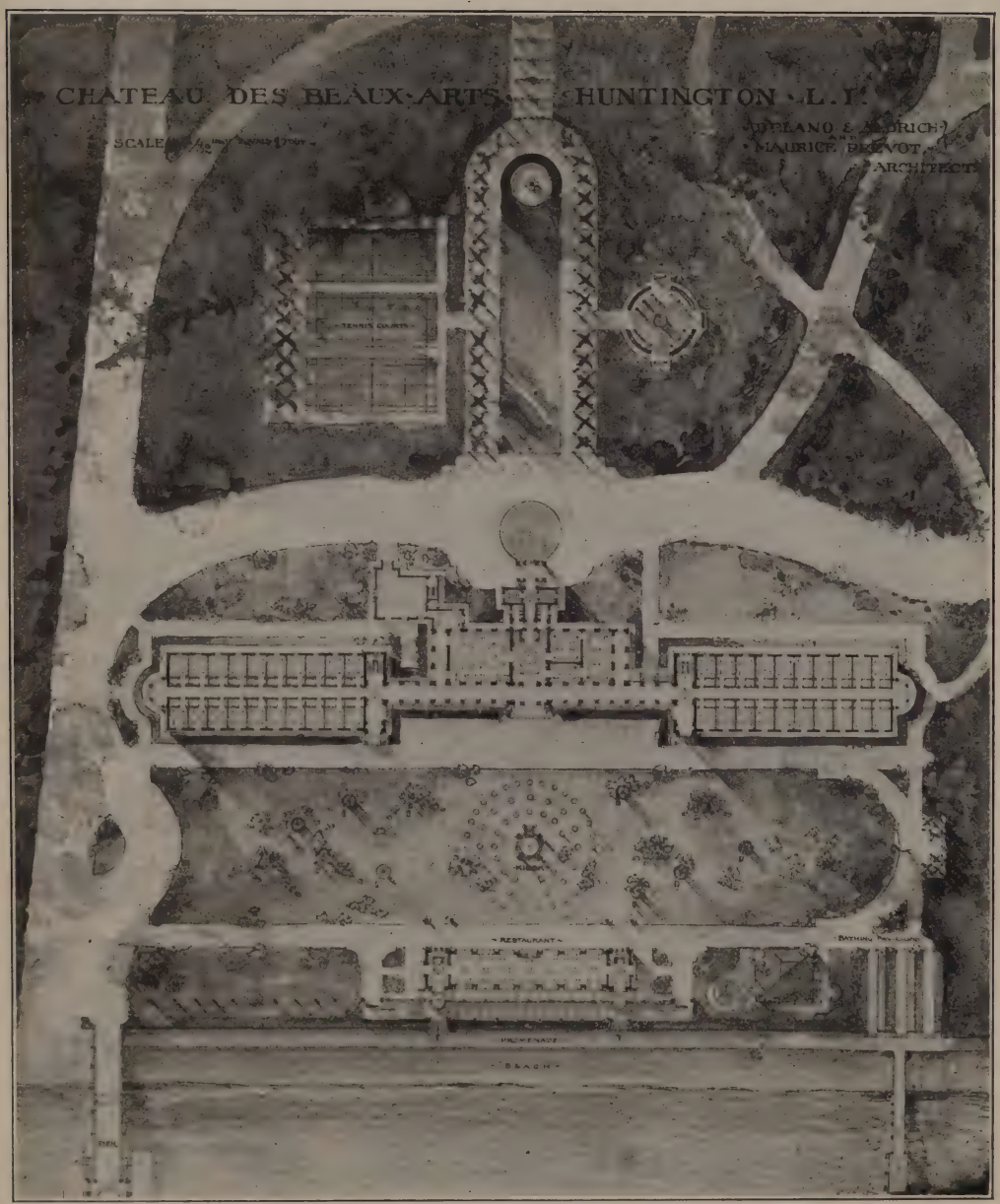
34th Street, between 8th and 9th Avenues, New York. Hammerstein & Denivelle, Decorators.

··· A Château ···
des Beaux Arts

Huntington,
Long Island

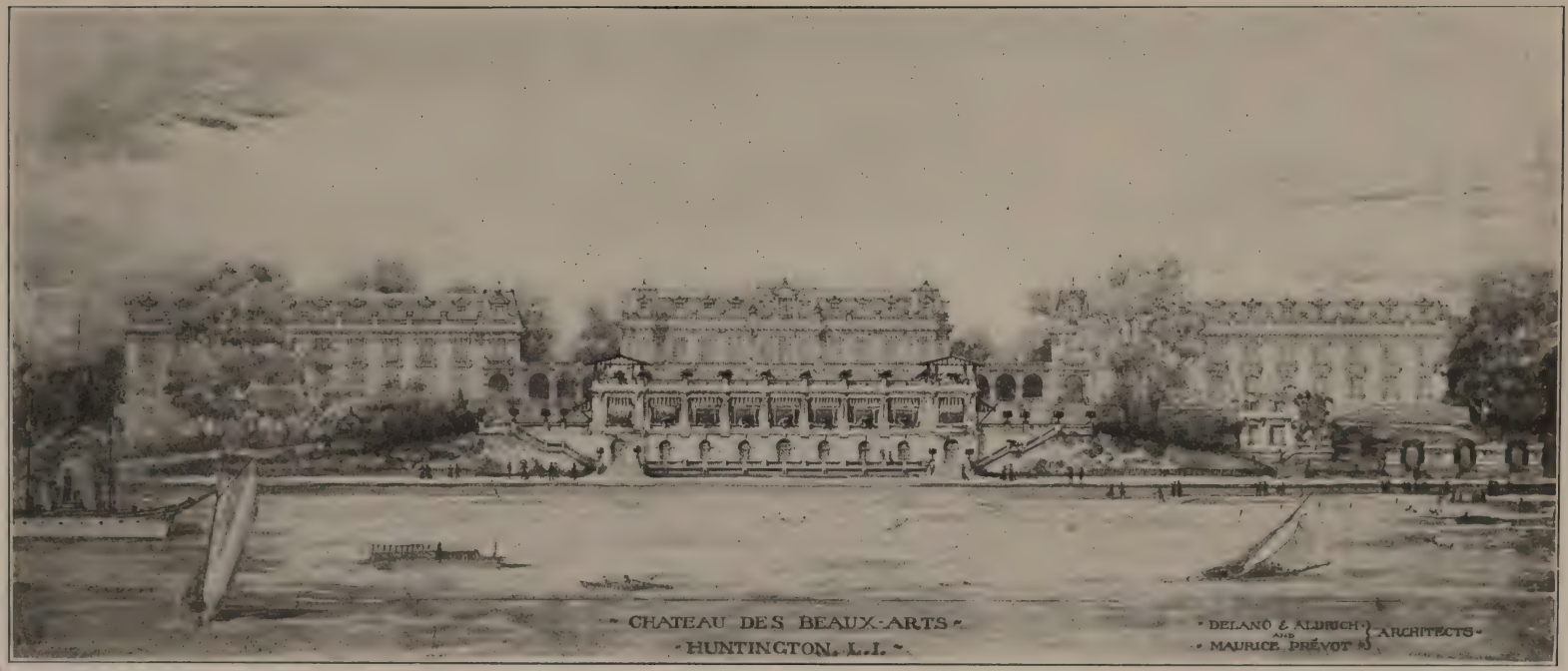


ARCHITECTS :
Delano & Aldrich and Maurice Prévot



CHATEAU DES BEAUX ARTS—PLAN.

Huntington, L. I. Delano & Aldrich and Maurice Prévot, Architects.



CHATEAU DES BEAUX ARTS—ELEVATION FROM THE SEA.

Huntington, L. I.

Delano & Aldrich and Maurice Prévot, Architects.



INTERIOR OF THE MADISON SQUARE PRESBYTERIAN CHURCH, LOOKING TOWARD THE PULPIT.

McKim, Mead & White, Architects.

NOTES & COMMENTS

AMERICAN CIVIC ASSOCIATION

The annual convention of the American Civic Association, held a few weeks ago in Milwaukee, brought out with emphasis the change which the association has undergone under its present officers. The child of the American Park and Outdoor Art Association and of the American League for Civic Improvement—two excellent societies that were doing about the same work from different points of view—time reveals the preponderance of its inheritance, in traits and character, from the League. This was not suspected at first, and to old members of the Park and Outdoor Art Association—including many architects—it may be a cause for regret. Whether the civic association is a gainer remains to be seen. In the list of those attending the convention it is notable that such names as the Olmsteds, the Mannings, G. A. Parker, C. M. Loring, are lacking for the first time since these men met together, in April of 1897, to form a society for the promotion of outdoor art. Park officials also were few, and the list is made up for the most part of unknown names—the names of worthy men and women who are working for village and town improvement in small communities, but who are not yet the leaders in such work in a national sense. Nor have numbers made up for prominence, the registration at the convention having been only about two-thirds that at Buffalo three or four years ago. But numerical gain may come. The Niagara campaign was worth, merely in advertising, whatever it cost the association. In this connection it may be said that the most important action of the convention was a resolution raising the annual dues of individual members from $2 to $3 and of societies from $2 to $5. Thus the present year promises to be crucial. Merely to stand still will be greatly to lose. The officers, who were re-elected, are now in their fourth consecutive year.

DETROIT'S IMPROVEMENT

The directors of the Detroit Board of Commerce have issued to the membership a handsomely printed pamphlet report, illustrated with diagrams, urging the extension of Washington Boulevard The suggested prolongation is only one block in length, but the plan has wide-reaching significance to the city. Architectural considerations have also exerted an influence, and it is interesting to find an organization of business men so elaborately advocating a change in street lines. For the one block extension would not be even the cutting through of a new street, but the widening of an existing way. Some two years ago, as may be remembered, the board employed Messrs. Olmsted and Robinson to make independent reports on the beautifying of the city. Mr. Robinson in his report called attention to the desirability of this little extension of Washington Boulevard, which would connect it with Lafayette Boulevard, would give it the Federal building and tower as accent, would open the Federal building on that side, and would considerably facilitate a growing traffic. He admitted that the cost of such an improvement near the city's center would be considerable, but he urged that it was worth its cost. The Board of Commerce has now made a purchase for its permanent home at what would be the terminus of the extended street, and, estimating the improvement's cost at $300,000, it proposes that it be made under the street opening act, which would put a large part of the cost on the immediately benefited property, so imposing a heavy tax on the board itself. It urges the improvement with all the argument and appeal of a long, thorough and elaborate report, and the board frankly admits that it has chosen this, believing it the most immediately necessary, as the first step toward the carrying out of the suggestions made two years ago by the two consulted authorities.

Such is the wider significance of the campaign embarked upon. The following extract from this business men's report is notable: "Make Detroit more beautiful and you make it more attractive to the manufacturer and workman; you increase the earning capacity of every citizen and make prosperity still more prosperous. It is particularly worthy of note that the impetus which has been given to the growth of American cities has come directly from the expression of public spirit, civic patriotism, and enterprise in making the city beautiful. * * * There is competition among cities, and the civic pride of Detroit's people must find expression in practical works."

A SPRINGFIELD REPORT

Nearly five years ago, in a great stirring of public spirit, the people of Springfield, Mass., bought back a little of the shore of their beautiful river. To this end Court Square was, at least theoretically, extended to the river front. Ambition rose with accomplishment and with the practical study of actual conditions. It came to be realized that the thing that really ought to be done was the removal of the tracks of the N. Y., N. H. & H. R. R. from the east shore to the west shore of the river, and the winning back for the city of two and one-half miles of river front. This was a stupendous project, and many months ago an unpaid commission of three was appointed by the municipality to consider it. Time went on and the commission never reported—not even progress. There began to be complaints in the newspapers and taunting references to the committee. But its chairman was Nathan D. Bill, who, when he is interested, does not sleep and does not weary. At last he has made his report. It is a matter-of-fact discussion, weighted with figures—a classic in its calm sanity, in its terse thoroughness and comprehensiveness. But in its record it is thrilling. It is of the sort that has given to Springfield, Mass., the reputation among cities that she has. The report was read at a meeting of the city council in mid-November in the presence of many business men. Mr. Bill recited the original proposition of President Mellen, of the railroad, that his road would deed to the city its property along the river, from the Boston and Albany tracks south for two miles and a half, if the city would pay the cost of a new two-track road across the river, up the west bank, and back again into the city, and would give to the company a certain right of way privilege it desired. To the latter there was no municipal objection, and the proposition seemed not unfair. But the estimated cost of the work, at least $2,000,000, was prohibitive. The chairman recited the steps by which, little by little, the figures that the company would accept were lowered. With pauses at $1,500,000 and at $1,280,000, the corporation was persuaded at last to agree to accept not over $933,000 and to waive the municipality's construction of the second bridge—which admittedly could not be included in that limit. Yet even this sum might seem too large to the city. Mr. Bill had only two days and a half left. He went to some of his friends and asked them for personal subscriptions in order that the net cost might be within the city's means, and he himself gave fifty thousand dollars! E. H. Barney promised him the like sum. A dozen others, with large gifts, brought up his total of private subscriptions to $178,000, and it was perceived that $200,000 could be easily reached. At the meeting, when the report was read, one man jumped to his feet and pledged a thousand dollars. There are many further details in the report that have local interest and significance—the study of the saving on a bridge approach; of assessment values, present and prospective; of transit facilities for the industries now located along the railroad. But enough has been said to show how notable was the report and how fortunate are the citizens of Springfield.

ACTIVITIES OF THE PRESERVATION SOCIETY

The annual report of the American Scenic and Historic Preservation Society, recently issued in the usual pamphlet form, contains not a little that is of interest to architects. The society has devoted greater attention to the preservation of sites than of buildings, perhaps because sites keep more easily; but no architect who is sincerely interested in his profession can be indifferent to even that. The society has urged the appointment by the Mayor of New York of "a commission of experts on local history" to verify historical sites that are to be marked by tablets or monuments and to pass upon the accuracy of the inscriptions to be placed on them. Meanwhile, until such a commission is appointed, the society does the work. But its view is not wholly backward. It has

made an earnest effort to secure an improvement in the appearance of that part of the elevated railroad structure which is in Battery Park. It suggested that "if a light, flat arch of some fireproof material—terra cotta, for instance—were thrown across from one side to the other of the longitudinal beams, the path paved underneath and the ironwork of the structure painted olive green," there would be a great improvement. And in urging the company to do this, it remarked that the road had been there for thirty years, was not likely soon to be disturbed, and that anyway its tenure was similar to that of persons who have stoops within the stoop line. They do not make their stoops cheap and unsightly, because they do not own the fee of the land. But the railroad company wants the land or permanent rights on it. Another matter of contemporary interest to which the society gave attention was the proposed location of the Central Library of Brooklyn on the plaza of Prospect Park. This the society opposed, claiming that it would cause a radical and discordant change in the approach to the park, which is "a gem in itself," by interjecting a vast pile of masonry into the encircling verdure and throwing the approach out of balance; that the building would dwarf the Memorial Arch and confuse its setting, and that the site was wholly inadequate for the dignity of the building. Although the protest failed, good educational work is done in calling the public's attention to such considerations. During the year the society also joined with other bodies in the attempt to save the old First Presbyterian Church, on Fifth Avenue, between Eleventh and Twelfth Streets. The structure's architectural claims were thus presented: "This church is built in perpendicular Gothic, its tower being a copy of the celebrated tower of Magdalen Chapel at the University of Oxford, England, the main building being a replica of St. Saviour's at Bath. The entire structure is a treasure of eccelsiastical art. Its churchly dignity and beauty can scarcely be paralleled on this side of the Atlantic." Various other arguments were presented, and the appeal closed with the words, "Business structures and apartment houses rise and disappear in a generation under the exigencies of the city's growth. There is little of permanence upon which to fasten one's memories, affections and historical traditions. A city needs just such piles as the beautiful First Church to * * * stand as monuments of the best and noblest human effort."

THE ARCHITECT'S PROFIT ON SMALL JOBS

In these days when so much is being written about the architect's fees and his small profits, it might be interesting to inquire: Can he make any profit on small jobs, and is it not a fact that a client who has only ten thousand dollars or so to spend on his house stands a slim chance of getting a well-designed and economical result?

These questions were recently propounded by the writer to an architect friend who admitted that while it was true beyond a doubt that the architect who has as many large jobs as he can handle, cannot afford to take small jobs, country houses for eight or ten thousand dollars for example, maintained, however, that an architect can make a very respectable income from such small jobs and do thorough work. As proof of this assertion he pointed to his own experience of about thirty years. He told me that one of his colleagues came to him recently confiding to him his business woes. He was doing more work and larger work and was making much less profit than he. My friend attributes his advantage to the way in which he runs his office. He contends that architects are apt to fuss to much with small matters that don't really matter much one way or the other, that they employ draftsmen to do things which they, the architects, ought really to do themselves. Thus, he says, unnecessary drawings are often made by subordinates. These drawings, he contends, are only for show anyhow, and keep the draftsman employed, and as his job is precarious at best he keeps on making such drawings just as long as his employer will stand for it. Such drawings add nothing to the quality of the design, being often only elaborations of the architect's rough sketches.

To explain his meaning my friend showed me about his office and told me he had only one man besides himself in the office, and that man an experienced and capable fellow, with whose aid he was perfectly able to handle a fair amount of work. I was shown some detailed drawings which were, it is true, not handsomely finished for the client's delight, but thoroughly businesslike, and told the story perfectly to the experienced contractor for whose eye alone they were intended. With proper specifications and superintendence such drawings would no doubt result in as satisfactory a job as others elaborately and beautifully drawn out by a draftsman of less experience and ability.

My friend's system, in short, is to do all or most of the drawing himself right up to the full-size details and to put all his effort into the study of the problem, and neglect finishing drawings as far as possible so that when he has finished a set of drawing for a job they are few in number, and interest the contractor only.

It must be added, however, that this system, while admirable, *per se*, takes about all of the architect's time and allows him very little play for seeking new work and keeping in touch with his business friends, and it must be remembered that the architect of to-day who would be successful must be not only a capable man at his profession, but also a thorough business man.

PRINCIPLES & PRACTICE OF PLUMBING BY J. J, COSGROVE

The Standard Sanitary Mfg. Co. of Pittsburgh offers, especially to architects, engineers, plumbers and builders, a very attractive and serviceable volume on the Principles and Practice of Plumbing. The book is a series of articles that were written by Mr. J. J. Cosgrove, of the International Correspondence Schools text-book staff for *Modern Sanitation*. The publishers found such an interest evinced in these articles that they were prevailed upon to publish them in book form, and the result, we think, has justified the unusual circumstance of a manufacturer becoming, for the time, publisher. The book gives besides the best solutions of every-day problems of plumbing, with all the vexatious details of piping, venting, trapping, etc., the questions involved in water supply systems, purification and filtration of water, and lastly plumbing fixtures. The subject matter is set forth in a clear and practical manner, with an abundance of good line drawing illustrations and many service formulae to which the author gives added interest and value by applying them, as he goes along, to practical examples. Mr. Cosgrove takes the point of view that his reader is a person of average intelligence with little or no previous knowledge of the subject.

It is just such a book that has been in demand for a long time. The trouble with many similar technical text and reference books has invariably been that they have been so technical and involved as to be of little service to the average man who most needs them in his daily work, and have rather than helped him to master the fundamental principles of the subject, scared him off and discouraged him in his efforts. Even professional men of training with some power of analysis have, as a class, profited comparatively little by some of these books. The author very ably follows the reader through all the little mental notes that are sometimes for him (the reader) the crux of the discussion; he takes the trouble to explain little points that are generally accepted as self-evident, and this is only another reason why the book should prove a welcome and valuable contribution in the field of technical reference books. The price of the book is three dollars.

THE INTERIOR OF THE MADISON SQ. PRESBYTERIAN CHURCH

The interior of this church marks a radical departure in the treatment of church interiors. How the public will like it, will depend on the readiness with which it can be made to change its point of view on church architecture. At present one hears the greatest diversity of opinion, from the fullest praise and admiration to the most sweeping condemnation. If one should ask the adverse critic, who would in general be the layman, what in his mind makes him take the position he does, he would doubtless confess that he is unable to say. It suffices for him that he feels so and so about it. The facts in the case probably are that people for so many hundreds of years have become so accustomed to seeing a certain set formula for Christian church architecture that they naturally resent any attempt to depart from the set order of things. Such a resentment would naturally not come so much from people who are interested in art, as from the general public to whose mind the building would appeal most during the periods of worship. The church being then the house of God becomes, to them, almost a part of their religion in which they would almost as soon tolerate a ruthless change as in their place of worship which is so intimately connected with their belief.

But people with artistic instinct who think over and discuss among themselves such matters take a totally different view, a more unprejudiced view. They look at the church as a place of dignity and beauty, qualities which are perfectly in accord with the idea of reverence and awe; they do not allow themselves to be influenced by the actual means that are employed to secure these qualities. To such people the problem of a church interior admits of many beautiful solutions regardless of the architectural or other forms employed. The idea that a

church interior is unlike what is being and has been done longer than they can remember, is to them a secondary consideration or even entirely irrelevant. They are looking for propriety and beauty, and if they find these qualities they like the church.

Not so the layman's way of arriving at the conclusion. He has in mind certain ideas and forms which to him have come to stand for a particular purpose. He at once seeks these ideas and forms, and failing to find them in such shape that he can understand them, loses his basis for judging and whether consciously or unconsciously he becomes prejudiced against the new interpretation. He thus shuts himself off from appreciating the propriety and beauty of what is before him. From such a person one can expect no appreciation worthy of his intelligence until he can be made to experience a change in his point of view.

It is this matter of the public's point of view that the architects of the Madison Square Presbyterian Church will have to alter if they expect a proper appreciation of their efforts. The fundamental question is, after all, whether the American public has yet been educated up to such an understanding of art.

NEW FEATURES IN THE ARCHITECTURAL SCHOOL, COLUMBIA UNIVERSITY

The School of Architecture of Columbia University has entered upon the twenty-sixth year of its organized existence with a registration which promises to equal or exceed the highest previous record. This is peculiarly encouraging because the requirements for admission to the course for the new degree of Bachelor of Architecture have been so materially increased over previous requirements that a considerable reduction in the registration would not have been strange. About one-fourth of the new registrations were for the course for the degree, these candidates each having had two or more years of collegiate study before applying for admission to this school. It is the intention and hope of the trustees and of the faculty to raise the grade and quality of the training of men who carry away this new diploma to the level of other post-graduate professional discipline; so that a Columbia Bachelor of Architecture shall represent in the community something more than an accomplished draftsman or highly trained technician in building; that he shall be also a man of broad education and genuine culture. For such young men as lack in adequate mathematical training and have been unable to attend two years of collegiate study, but who, nevertheless, possess other qualifications for architectural practice, the School has now for over a year offered a course leading to a Professional Certificate, for which the requirements are less exacting than formerly for the degree, especially on the side of mathematics; and in which the engineering knowledge required by the average practitioner is provided in an elementary but thorough course in graphical statics, the use of standard tables of constants, scantlings, etc., and such mathematical calculations as can be made without the use of the calculus. It is remarkable how efficient and practical a course in architectural engineering has been laid out by Mr. Snelling upon these lines. It is quite sufficient to meet the requirements of probably nine-tenths of the practice of three-fourths of the architects even in this city, where engineering problems are so numerous. The certificate students are permitted to diminish somewhat the amount of historical study required in the course for the degree, but are held to somewhat higher requirements in the amount and quality of work in Design. For both groups of students the requirements for admission in draftsmanship have been materially increased over previous years. Every student entering the School, besides passing the necessary formal examinations or presenting his certificate of collegiate studies, must give satisfactory evidence of proficiency in freehand drawing, architectural drawing, the orders and shades and shadows. This requirement, not too strongly insisted upon during this first year of its application, will be more and more strictly enforced in the future; with the result that within two or three years the course in the School will be relieved of these elementary branches and the duration of the course materially shortened. Comparatively few students are now able to meet its requirements within the four years formerly considered sufficient.

The authorities of the School are very desirous that architects as well as the draftsmen in their offices should know and appreciate the opportunities which it offers to practising draftsmen for professional study in various lines. Any draftsman with two or three years' experience may enter the School without examination and take such courses as he pleases, paying for each lecture-course $15 a year for each hour per week occupied by the course. There are a number of draftsmen who have made special arrangements with their employers to absent themselves for four or six hours per

week from the office to take courses at the University, most of them making up the lost time in the office out of hours. It would seem possible greatly to multiply these cases, to the great advantage of the draftsmen and of the profession. Moreover, draftsmen who are able to devote their evenings and holidays to work in design can register for the regular problems in Columbia University and do the work either in Havemeyer Hall or in the downtown ateliers, or, if they prefer, in the ateliers maintained by the Beaux-Arts Society. All such students receive credit on the records of the University for points acquired in their work there, and should such a student later find the opportunity to enter either of the regular courses, the work already done would be counted to his credit. The University also maintains a course of lectures on the History of Architecture running through two years (60 lectures in all) and abundantly illustrated, which are given every Thursday afternoon at four o'clock by Professor Hamlin. This is a University Extension course, and is attended by a number of draftsmen who leave the office about 3.30 P. M. on this one day in the week, and find the instruction in the history and development of the various styles very helpful in their office work. It is hoped that in the near future means may be found for maintaining a summer school of architectural drawing and construction in connection with the regular Summer Session of the University.

The interesting celebration of the quarter-centennial anniversary of the organization of the School has already been described in another issue.

THE FAILURE OF THE BIXBY HOTEL

In these columns some months ago there appeared several short notes on reinforced concrete construction. One of these notes dealt with reinforced concrete and the architect. That his lack of knowledge of the subject results in his utter helplessness at the hands of the contractor was one of the points made.

The consequences that are bound to follow from the questionable work of unscrupulous contractors are perfectly apparent. The recent failure of the Bixby Hotel at Long Beach, Cal., gives the subject a singular significance. From an article by John B. Leonard, C. E., on the failure of the Bixby Hotel in the January issue of "The Architect and Engineer of California," we are prepared to form a pretty good opinion of the cause of the trouble in that particular instance.

The steel reinforcement was found insufficient to do its work of transmitting the tensile strains to the proper members. Girders were run in one direction only, and these parallel to the greatest spacing of the columns, which revealed the absence of any adequate tie at floor levels. This means no lateral bracing for floors or walls, and that the floor panels are enclosed by girders on two sides instead of on all four and doubly reinforced, as is customary in good reinforced concrete construction.

In concluding the article, Mr. Leonard says:

"The ruins of the Bixby Hotel show clearly that great care must be taken in the design and execution of such structures. They also confirm the belief that when these precautions have been taken, reinforced concrete contains the merits and security that have been advanced in its favor."

The photographs of Mr. Schwab's residence; St. Paul's Chapel, Columbia University; Château des Beaux Arts, Huntington, L. I.; and the interior of the Madison Square Presbyterian Church, reproduced in this issue, were made by August Patzig, Jersey City, N. J. Credit is given in this place because the matter was overlooked until it was too late to place the photographer's name in the customary place.

Messrs. D. Van Nostrand Co., of 23 Murray and 27 Warren Sts., announce for sale a new book on the Chemistry and Technology of Mixed Paints, by Mr. Maximilian Toch, director of the laboratory of Toch Brothers, New York City. The author, in this volume for paint manufacturers and chemists, as well as for students of Chemistry, gives a concise record of his personal researches, in the field of mixed paints, leaving out all such matter which can be readily found in other books of reference and making an attractive book of some 160 pages, illustrated with 60 photomicrographic plates and other illustrations.

In the December issue, which contained an article on "Conyers Manor," the estate of Mr. E. C. Converse, the name of the estate was erroneously given as Converse Manor.

A Chance for Every Specification Room

What follows is especially addressed to those whose duties in architects' and builders' offices necessitate their making use of catalogues.

Sit down for a moment and think!

Bring to your mind catalogues big and little—the large volume of Jones & Co., the smaller catalogue of Brown & Co., the mere pamphlet of Robinson & Co. Whenever you have turned to these catalogues have you not done so for a definite purpose? Usually you were in search of some specific piece of information—size, price, weight, name and address, or something else of the same kind. Certainly you did not turn to these books or booklets with any intent of "doing a little reading." Probably you were in a hurry. You wanted to get at a fact. You needed a book that would answer your question in precisely the same sort of way the telephone book gives you the telephone number of the subscriber you are seeking.

Now, the question we want you to decide is this: Does the ordinary average catalogue sent to you by building material firms serve you as well as it might?

Is it arranged on the most logical plan? Does it assist you in the task of reference? Does it render up to you in a clear, unmistakable manner the information you want?

Or, on the other hand, is it put together and arranged in a comparatively imperfect way? Is it clogged with "reading matter" and "salesmen's talk"? Is it deficient in the specific information that would really be of value to you in the making of specifications and the development of plans?

If you were going through the catalogue and adjusting it for your own purposes, how much of the reading matter would you exclude; how much new material would you add? What would be the exact nature of these omissions and additions?

Many of these catalogues contain illustrations, some of them very pretty pictures. You get views of the Congressional Library, State Houses, post offices, residences of prominent persons, etc., wherein the manufactured goods are installed. Are these pictures of any value to you? Would you, for *your* purposes, exchange them for really good working diagrams and technical drawings?

Some catalogues are little and some very big. Which is the better? Is there any rational size?

Then again, as you know, the makers of catalogues expend an enormous sum of money on what is called "artistic" covers, heavy paper, stamped and gilded. A lot of money is also spent upon fancy colored inks and delicately tinted papers, novelties of almost effeminate character. Do these serve any purpose in the specification room? Would this expenditure be more wisely made if devoted to services of direct utility?

You know, of course, that millions upon millions are spent annually in the United States on catalogues. The cost of these catalogues is, of course, charged against the goods or the services which the architect, the builder or the owner subsequently buys. Literally thousands of these catalogues, big and little, are sent out annually in the hope that they will be maintained and used in specification rooms. You also know, of course, that only a very small proportion really ever get into service. A great many are thrown into the waste-paper basket shortly after the mail car-

rier has delivered them. A great many more are put aside with the idea that they may "come in handy" some time; which they rarely do. After gathering dust for a time and obstructing shelves, they are thrown away. A small minority are retained. But even this small minority are, after all, quite numerous. They are put into boxes or arranged in files or cabinets.

Whichever plan is adopted, it requires labor and entails cost. Moreover, is it really effective? Don't the catalogues get out of place? Don't they become old and obsolete? Doesn't it really happen that the one you want is never on hand at the essential moment?

Now, can you not think of a better way of arranging and handling this trade information?

For instance, would anything, in your judgment, be gained by making all catalogues of the same standard size; by printing them all in the same type; by arranging them all logically one following the other in alphabetical order, by omitting from the reading matter all advertising and "hot air"; by adding to the reading matter all the facts and nothing but the facts that are *required in the specification room;* by then binding all these catalogues together in one volume or a series of volumes, and adding to the whole a complete cross index so that you could find in a moment anything you were looking for.

Would an arrangement of that kind be an improvement on the existing state of affairs? If not, what can you suggest?

If you will sit down and write out your ideas in clear English, telling us:

(1) What the catalogue, as you see it, should contain.

(2) How it should be arranged, printed and distributed.

And after having typewritten the same, send it to "SWEET'S" at the address below, you will have a thoroughly fair chance to win one of the four prizes mentioned—prizes which will be awarded by an impartial judge whose name will be announced later.

"SWEET'S" will give a first prize of $100.00, a second prize of $75.00, a third prize of $50.00, and a fourth prize of $25.00 to the four best papers that shall be sent in to it dealing with the catalogue. It is understood that the manuscripts sent to "SWEET'S" shall in all cases become the property of the publishers, and they shall have the right of printing any or all.

It is to be understood that fine writing will not count in the award, which will be largely based upon the completeness of the analysis and criticism of the catalogue contained in the paper submitted.

The publishers of "SWEET'S" want to find out what it is *the specification room* most desires in a catalogue.

All manuscripts must be delivered on or before March the 1st, 1907, to the headquarters of "SWEET'S," No. 11-13 E. 24th St., New York City.

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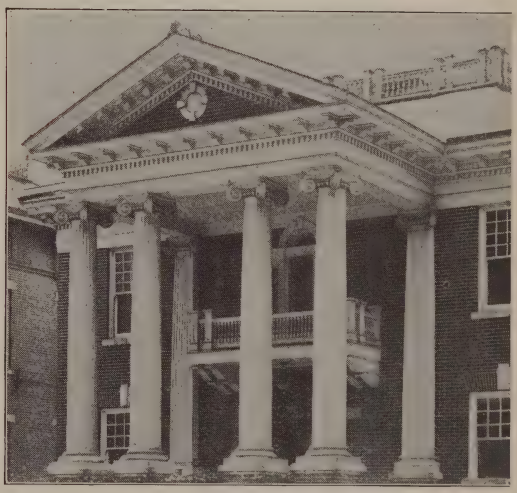
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1891-1906 INCLUSIVE

To answer the numerous inquiries for information from architects and others who are interested in the work that is being done by the ARCHITECTURAL RECORD, the following index, covering all articles and illustrations published in the magazine from its beginning in 1891, up to January, 1907, has been prepared with much care. While its chief aim is to give to architects a ready reference to their files of the magazine, it is hoped that all subscribers to the ARCHITECTURAL RECORD will find this index serviceable.—EDS. ARCH. RECORD.

ABBOTT, House of Mt. Grafton, S. L. (Concord, Mass.) Illustrated Article. Dec., 1906; pp. 503-509.

Aberrations, Architectural (The Salvation Army Building, N. Y. C.). Illustrated Article. July, 1896; pp. 77-80.

Aberrations, Architectural, No. 16 (Nos. 585-587 B'way, N. Y. C.). Illustrated Article. Oct., 1897; pp. 219-224.

Aberrations, Architectural (No. 17). Illustrated Article. Oct., 1901; pp. 700-704.

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Aberrations, Architectural (No. 19). Illustrated Article. June, 1902; pp. 221-226.

Acanthus Motive and Egg-and-Dart Moulding, The trated Article. (Tech. Dept.). Oct., 1899; pp. 88-116.

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Anderson, Garden of Larz (Brookline, Mass.). Illustrated Article. March, 1904; pp. 182-244.

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Williamsburgh Trust Co.'s Building. Illustration. June, 1906; p. 466.
Barclay Building, The (N. Y. C.). Illustration. Sept., 1905; p. 232.
Barney & Chapman, The Work of Messrs. Illustrated Article. Sept., 1904; pp. 204-296.
Beauty, A Plea for. Illustrated Article. Aug., 1905; pp. 161-166.
Bed Room of Modern American Residences. Illustrated Article. Oct., 1904; pp. 296-406.
Bel Court (Newport, R. I.) Residence of O. H. P. Belmont. Illustrated Article on the Work of R. M. Hunt. Oct., 1895; pp. 97-180.
Bellevue Hospital, The New. Sept., 1906; pp. 237-238.
Bellevue-Stratford Hotel, The. (Phila.). Illustrated Article. March, 1905; pp. 167-188.
Belmont Hotel. Illustrated Article. July, 1906; pp. 63-69.
Belmont, House of O. H. P. (Hempstead, L. I.). Illustrations. May, 1902; pp. 100-105.
Belvedere Hotel (Balto.) Illustrated Article. March, 1905; pp. 167-188.
Berlin, A Pleasure Resort Near. Illustrated Article. Dec., 1905; pp. 447-452.
Berwind, Residence of E. J. (Newport, R. I.). Illustrated Article. Feb., 1904; pp. 93-121.
Beth-Zion Temple (Buffalo). Illustrations. April, 1892; pp. 391-400.
Billings House, The (Elberon, N. J.). Illustrations. July, 1904; pp. 76-78.
Biltmore, Residence of George Vanderbilt (Asheville, N. C.). Illustrated Article on the Work of R. M. Hunt. Oct., 1895; pp. 97-180.
Black House, The (Milwaukee). Illustration. Feb., 1906; p. 161.
Blair Building (N. Y. City). Illustrated Article. Dec., 1903; pp. 436-443.
Blair, Residence of Chauncey J. (Chicago). Illustrations. Nov., 1903; pp. 374-378.
Blickling Hall (England). Illustrated Article. Oct., 1901; pp. 666-678.
Böcklin, Grotesque Sculpture of. Illustrated Article. Feb., 1903; pp. 169-174.
Boston Public Library. Sept., 1906; pp. 162-164.
Bouvard, Work of J. A. Illustrated Article. Jan., 1901; pp. 289-312.
Bowen, Residence of Clarence W. (N. Y. C.). Illustrated Article. Oct., 1904; pp. 355-357.
Bourne, Residence of F. G. (Oakdale, L. I.). Illustrations. April, 1902; pp. 67-75.
Breakers, The (Newport, R. I.). Residence of Cornelius Vanderbilt. Illustrated Article on the Work of R. M. Hunt. Oct., 1895; pp. 97-180.
Brewery, The Schoenhofen (Chicago). Illustrated Article. March, 1905; pp. 201-207.
Brick Building in London. Illustrated Article. Dec., 1903; pp. 445-452.
Brick Work in New York, Recent. Illustrated Article. Feb., 1903; pp. 144-156.
Bridges. Illustrated Article. Oct., 1901; pp. 615-640.
Bridges, Artistic. Article. Oct., 1901; pp. 713-716.
Bridges in New York City, The New. Illustrated Article. Oct., 1905; pp. 243-262.
Broadway Buildings, Nos. 26 to 42. Notes and Comments. Illustrated. Feb., 1905; pp. 142-146.
Broadway Tabernacle, The. Illustrated Article. Sept., 1904; pp. 204-296.
Brokaw Residence, New York. Illustrations. Oct., 1891.
Bronze Work, Recent Examples of. Illustrated Article. Nov., 1904; pp. 488-496.
Bronze and Iron Decorations, Modern Use of. Illustrated Article. July, 1904; pp. 26-46.
Bronxville, N. Y., Lawrence Park. Illustrated Article. Sept., 1904; pp. 167-177.
Brooklyn, Architectural Views in. Illustrations. Jan., 1899; pp. 268-274.
Brooklyn Real Estate Exchange. Illustrated Article. April, 1892; pp. 401-404.
Brownstone District, Renovation of the. (N. Y. City). Illustrated Article. June, 1903; pp. 555-571.
Buffalo Houses by George Cary. Illustrations. June, 1906; pp. 458-465.
Building Law, The New York. Article. July, 1891; pp. 69-82.
Bungalows. Oct., 1906.
Bungalow, The California. Notes and Comments. May, 1906; pp. 395-396.
Bungalows, Some California. Illustrated Article. Sept., 1905; pp. 217-223.

Burnham & Co., Work of D. H. Illustrated Article. Feb., 1896; pp. 49-72.
Bushnell, Residence of A. S. (Springfield, O.). Illustrations. July, 1892.
Business District, The Plan of a. Illustrated Article. March, 1903; pp. 234-247.
Business House Fronts in New York City, Reconstructed. Illustrated Article. July, 1904; pp. 13-25.
Butler Bros., The Warehouse of (Jersey City). Notes and Comments. Illustrated. June, 1905; pp. 513-514.
Byzantine Architecture. Illustrated Article. July, 1891; pp. 83-95.
Byzantine Architecture. Article. Oct., 1891; pp. 236-239.
Byzantine Architecture. Article. Jan., 1892; pp. 347-362.
Byzantine Architecture (Neo-Byzantine). Article. April, 1892; pp. 485-495.
Byzantine Architecture (Neo-Byzantine). Article. July, 1892; pp. 93-99.
Byzantine Architecture, Secular. Illustrated Article. Oct., 1892; pp. 193-208.
Byzantine Architecture (Decoration). Illustrated Article. Jan., 1893; pp. 337-350.
Byzantine Architecture (Construction). Article. April, 1893; pp. 493-500.

CABOT, Residence of Dr. A. C. (Canton, Mass.). Illustrated Article. March, 1904; pp. 182-244.
Cabot, The Residence of Mr. Samuel. Illustrated Article. Oct., 1905; pp. 263-272.
Cady, Berg & See, Work of. Illustrated Article. April, 1897; pp. 517-553.
Caesar, An Appeal to. Article. Jan., 1892; pp. 281-285.
Cairo Apartment House (Wash., D. C.). Illustrated Article. April, 1895; pp. 473-476.
California, Architecture in Southern. Illustrated Article. Jan., 1905; pp. 1-17.
Campanile, Building the New (St. Mark's). March, 1906; pp. 223-225.
Capitol, Minnesota State. Illustrated Article. Jan., 1906; pp. 31-36.
Capri. Villa Narcissus. Illustrated Article. May, 1902; pp. 71-92.
Carcassonne. Notes and Comments. April, 1906; pp. 307-309.
Carleton Building, The (St. Louis). Notes and Comments. Illustrated. June, 1905; pp. 514-516.
Carnegie, House of Andrew (N. Y. C.). Illustrations. Jan., 1903; pp. 76-84.
Carnegie Residence, N. Y. C., Drawings. Illustrations. July, 1899; pp. 78-81.
Carrère and Hastings, The Office of. Illustrations. Oct., 1900; pp. 144-149.
Cary, Buffalo Houses by George. Illustrations. June, 1906; pp. 458-465.

CATHEDRALS.

Aix-en-Provence Cathedral. Illustrated Article. April, 1896; pp. 362-377.
Avignon Cathedral. Illustrated Article. Jan., 1896; pp. 276-287.
Cathedral, A Modern. Illustrated Article. Jan., 1892; pp. 286-294.
Cathedral, A Modern. Article. April, 1892; pp. 435-447.
Cathedral at Westminster, The New. Illustrated Article. Aug., 1902; pp. 316-337.
Cathedral of St. John the Divine. Illustrated Article. July, 1892; pp. 44-53.
Cathedral of Troja. Illustrated Article. Jan., 1899; pp. 279-296.
Cathedral, Pisa. Illustrated Article. July, 1897; pp. 73-89.
Cathedrals, Architectural Refinements in French (Notre Dame). Illustrated Article. Jan., 1905; pp. 18-41.
Cathedrals, French (Cathedrals of Provence). Illustrated Article. Jan., 1896; pp. 276-287.
Cathedrals, French (Cathedrals of Provence). Illustrated Article. April, 1896; pp. 362-377.
Cathedrals, French (Part XV). Illustrated Article. July, 1898; pp. 49-65.
Cathedrals, French (Part XVI). Illustrated Article. Oct., 1898; pp. 168-179.
Cathedrals, French (Senez, Apt.). Article. July, 1897; pp. 98-103.
Cathedrals, Italian. Illustrated Article. Oct., 1898; pp. 125-149.
Cathedrals, Spanish. Illustrated Article. July, 1895; pp. 46-64.
French Cathedrals. Illustrated Article. Jan., 1893; pp. 303-323.
French Cathedrals. Bibliography and Statistics. Illustrated Article. April, 1894; pp. 387-418.
French Cathedrals (The Cathedrals of Provence). Illustrated Article. July, 1896; pp. 20-27.
French Cathedrals (Cathedrals of Provence). Illustrated Article. Oct., 1896; pp. 144-162.
French Cathedrals (Cathedrals of Provence). Illustrated Article. Jan., 1897; pp. 323-334.
French Cathedrals (The Maritime Cathedrals). Illustrated Article. Jan., 1898; pp. 333-356.
French Cathedrals (The Cathedrals of Provence). Illustrated Article. April, 1897; pp. 469-480.
French Cathedrals (The Maritime Cathedrals). Illustrated Article. Oct., 1897; pp. 124-142.
French Cathedrals (The Domed Cathedrals). Illustrated Article. April, 1898; pp. 465-473.
French Cathedrals (Part XV). Illustrated Article. July, 1898; pp. 49-65.
French Cathedrals (Part XVI.). Illustrated Article. Oct., 1898; pp. 168-179.
French Cathedrals (Senez, Apt.). Article. July, 1897; pp. 98-103.
Italian Cathedrals. Illustrated Article. Oct., 1898; pp. 125-149.
Mosques and Cathedrals, Spanish. Illustrated Article. July, 1894; pp. 14-35.
Pisa Cathedral. Illustrated Article. July, 1897; pp. 73-89.
St. John the Divine, Cathedral of. Illustrated Article. July, 1892; pp. 44-53.
Troja, Cathedral of. Illustrated Article. Jan., 1899; pp. 279-296.
Westminster, The New Cathedral at. Illustrated Article. Aug., 1902; pp. 316-337.

Cement Construction, A New French Method of (Part I). Illustrated Article. Aug., 1902; pp. 270-278.
Cement Construction, A French Method of (Part II). Illustrated Article. Sept., 1902; pp. 375-391.
Century Club. Illustrated Article on Work of McKim, Mead & White. May, 1895; pp. 4-8.
Ceramics in Architecture. Illustrated Article. Jan., 1902; pp. 1-7.
Chairs, English. Illustrated Article. Oct., 1898; pp. 150-167.
Chamber of Commerce, New York. Illustrated Article. Jan., 1903; pp. 55-69.
Champs, Château de. Illustrated Article. July, 1903; pp. 1-12.
Chantilly Castle. Illustrated Article. Dec., 1904; pp. 499-530.
Chapel, a Private, in Westchester. Illustrated Article. Oct., 1905; pp. 300-304.
Chapel, St. Catherine's (Spring Lake, N. J.). Illustrated Article. Feb., 1904; pp. 93-121.
Chapin and Gore Building, Chicago. Notes and Comments. Illustrated. Feb., 1906; pp. 154-157.
Chapman, Residence of Henry Otis (Woodmere, L. I.). Illustrated Article. Sept., 1904; pp. 204-296.
Chapter-House, A Novel College (Cornell). Illustrated Article. Sept., 1905; pp. 211-216.
Charleston, S. C., Georgian Work in. Illustrated Article. April, 1906; pp. 282-294.
Chemical National Bank, Broadway Facade of the. Illustration. Nov., 1905; p. 402.
Cheney, Residence of Frank J. (S. Manchester, Conn.). Illustrated Article. March, 1904; pp. 182-244.
Chicago Board of Trade Building. Illustrated Article. July, 1893; pp. 96-100.
Chicago, The University of. Illustrated Article. Oct., 1894; pp. 229-246.
Chicago, University of. Illustrated Article. Feb., 1896; p. 83.
Chicago & N. W. R. R. Co., The Building of the. Illustration. Nov., 1905; p. 396.
China, Corea and Japan, Architecture of. Illustrated Article. Jan., 1896; pp. 288-297.

CHURCHES.

All Angels' Church, Mural Decorations in. Illustrations. May, 1902; pp. 106-108.
Beth-Zion Temple (Buffalo). Illustrations. April, 1892; pp. 391-400.
Broadway Tabernacle, The. Illustrated Article. Sept., 1904; pp. 204-296.
Chapel, A Private, in Westchester. Illustrated Article. Oct., 1905; pp. 300-304.
Chapel, St. Catherine's (Spring Lake, N. J.). Illustrated Article. Feb., 1904; pp. 93-121.
Christian Science Church, A (96th St., N. Y. C.). Illustrated Article. Feb., 1904; pp. 158-171.
Church Building in New York, Recent. Illustrated Article. June, 1903; pp. 508-534.
Church, Croscombe Old (England). Illustrated Article. June, 1902; pp. 195-201.
Church, First Congregation, of Marietta, Ohio. Illustrated Article. Aug. 1906; pp. 116-120.
Church of Montmartre. Paris. Illustrated Article. July, 1893; pp. 1-28.
Church, The New Portals of St. Bartholomew's. Illustrated Article. April, 1904; pp. 293-311.
Churches by McKim, Mead & White. (Stockbridge, Mass.); St. Peter's (Morristown, N. J.). Illustrated Article. May, 1895.
Churches by Barney & Chapman. Illustrated Article. Sept., 1904; pp. 204-296.
Churches, Colonial. Illustrated Article. Jan., 1895; pp. 312-366.
Churches in Norway. Timber. Illustrated Article. Aug., 1906; pp. 93-102.
Cleveland M. E. Church, The. Notes and Comments. Illustrated. Dec., 1905; pp. 484-486.
Croscombe Old Church (England). Illustrated Article. June, 1902; pp. 195-201.
Greek Temple. The. Illustrated Article. June, 1905; pp. 441-470.
Holy Trinity Church (N. Y. C.). Illustrated Article. Sept., 1904; pp. 204-296.
Japanese Temple at Nikko. Illustrated Article. Oct., 1894; pp. 191-209.
Judson Memorial Church. Illustrated Article on Work of McKim, Mead & White. May, 1895; pp. 9-12.
North Church, Paul Revere's Old. Illustrated Article. March, 1906; pp. 214-222.
Norway, Timber Churches in. Illustrated Article. Aug., 1906; pp. 93-102.
Peddie Memorial Church. Newark. Illustrated Article. July, 1892; pp. 89-92.
Romanesque Churches. Illustrated Article. July 1892; pp. 9-29.
St. Anselm's Church, Mayfair, London. Illustrated Article. Nov., 1903; pp. 360-372.
St. Catherine's Chapel (Spring Lake, N. J.). Illustrated Article. Feb., 1904; pp. 93-121.
St. Jean at Poictiers, Church of. Illustrated Article. Oct., 1892; pp. 125-135.
St. Paul's Chapel at Columbia. Notes and Comments. May, 1905; pp. 427-429.
Sicily, Churches and Temples of. Illustrated Article. Jan., 1897; pp. 289-309.
Timber Churches in Norway. Illustrated Article. Aug., 1906; pp. 93-102.

Churchill, Residence of Winston (Cornish, N. H.). Illustrated Article. March, 1904; pp. 182-244.
City House in New York, the Small. Illustrated Article. April, 1899; pp. 357-388.
City Making, The Art of. Illustrated Article. May, 1902; pp. 1-26.
City, The Plan of a (Paris). Illustrated Article. Dec., 1902; pp. 692-703.
Civic Aesthetics. Illustrated Article. March, 1903; pp. 234-247.
Civic Art, What Is It? Article. July, 1904; pp. 47-52.
Clapp, The House of Elmer E. (Dedham, Mass.). Illustrated Article. Nov., 1906; pp. 419-426.
Clark Estate Houses (N. Y. C.). Illustrated Article. Nov., 1906; pp. 404-410.
Clark, Former Studio of Walter Appleton (N. Y. City.). Illustrations. Sept., 1903; pp. 220-224.
Clark, Garden of Mrs. R. M. (Pomfret, Conn.). Illustrated Article. March, 1904; pp. 182-244.
Clark, The House of Senator. Illustrated Article. Jan., 1906; pp. 27-30.
Clark, Residence of Mrs. Alfred Corning (Riverside Drive, N. Y. C.). Illustrations. April, 1902; pp. 50-52.
Clark, Residence of Howard L. (Bristol, R. I.). Illustrated Article. March, 1904; pp. 182-244.
Cleveland City Hall. (Drawings.) Illustrations. Nov., 1906; pp. 388-390.
Cleveland M. E. Church, The. Notes and Comments. Illustrated. Dec., 1905; pp. 484-486.
Cleveland, Public Buildings in. Illustrated Article. May, 1905; pp. 410-421.
Clinton and Russell, The Work of. Illustrated Article. Oct., 1897; pp. 1-63.

CLUBS.

Century. Illustrated Article on Work of McKim, Mead & White. May, 1895; pp. 4-8.
Clubs by McKim, Mead & White. Century, Metropolitan, Algonquin, Deutscher Verein, Freundschaft, Harvard. Illustrated Article. May, 1895.
Criterion, Interiors. Illustrations. Feb., 1905; pp. 164.
Harvard. Sept., 1906; pp. 180-181.
Lawyers' (N. Y. C., in the Western National Bank). Illustrated Article. June, 1898; pp. 94-95.
New York, The. Illustrations. April, 1906; p. 324.
Saddle and Cycle, The (Edgewater, Ill.). Illustrations. Dec., 1905; pp. 487-488.
Union League (N. Y. C.). Illustrated Article. July, 1896; pp. 68-70.
University. Sept., 1906; pp. 192-194.
University. Illustrations. Jan., 1901; pp. 112-123.
Yacht, New York. Illustrations. April, 1901; pp. 417-424.

Cobb, Henry Ives. Illustrated Article. Oct., 1894; pp. 229-246.
Cobb, The Work of Henry Ives. Illustrated Article. Feb., 1896; pp. 73-110.
Cold Storages for Books. Article. Aug., 1902; pp. 350-353.
Colonial Annapolis. Illustrated Article. Jan., 1892; pp. 309-343.
Colonial Architecture, Annapolis. Illustrations. April, 1894; pp. 338-350.
Colonial Architecture, History of Old. Illustrated Article. Jan., 1895; pp. 312-366.
Colonial Building in New Jersey. Illustrated Article. Jan., 1894; pp. 245-262.
Colonial Buildings of Rensselaerwyck. Illustrated Article. April, 1895; pp. 415-438.
Colonial Carpenter, The Education of a. Notes and Comments. March, 1906; pp. 227-229.
Colonial, Examples of Old. Illustrations. Oct., 1899; pp. 110-114.
Colonial Houses in Jefferson County. Illustrated Article. Aug., 1906; pp. 103-115.
Columbia, College Buildings, The Old. Illustrated Article. July, 1899; pp. 6-10.
Columbia University (Architectural Schools in the U. S.). Illustrated Article. July, 1900; pp. 1-21.
Columbia University, Horizontal Curves in. Illustrated Article. July, 1899; pp. 82-93.
Columbia University Library. Sept., 1906; pp. 178-179.
Composition, Principles of Architectural. Illustrated Article. July, 1898; pp. 1-25.
Composition, Principles of Architectural. Illustrated Article. Oct., 1898; pp. 181-223.
Composition, Principles of Architectural. Illustrated Article. Jan., 1899; pp. 297-331.
Composition, Principles of Architectural. Illustrated Article. April, 1899; pp. 434-465.
Commercial Buildings, Some New York (The Street & Smith Building, Stables for Arnold, Constable Co.). Notes and Comments. Illustrated. Sept., 1905; pp. 233-238.
Competitions, The Vicissitudes of Architecture. Article. Oct., 1894; pp. 147-156.
Concrete Building, A (Illinois Steel Co.). Notes and Comments. Illustrated. May, 1906; pp. 396-397.
Concrete, A Dwelling of (J. H. Osborne, Auburn, N. Y.). Notes and Comments. Feb., 1906; pp. 159.
Concrete Skyscraper, The First. Illustrated Article. June, 1904; pp. 531-544.
Concrete, Villas All. Illustrated Article. Feb., 1905; pp. 85-100.

Congressional Library (Wash., D. C.). Illustrations. Jan., 1901; pp. 154-159.
Construction, English Suburban House. Illustrated Article. Oct., 1896; pp. 114-125.
Converse, Estate of Mr. E. C. (Greenwich, Conn.). Illustrated Article. Dec., 1906; pp. 481-488.
Coolidge, House of T. J. (Magnolia, Mass.). Sept., 1906; pp. 232-234.
Copenhagen, The City Hall at. Illustrated Article. Oct., 1905; pp. 283-299.
Coram Library. Illustrated Article. Jan., 1904; pp. 55-91.
Corcoran Art Gallery (Wash., D. C.). Illustrations. April, 1902; pp. 5-9.
Corner Houses in Paris. Illustrated Article. Jan., 1897; pp. 310-322.
Country Estate, The American. Article. July, 1905; pp. 1-7.
Country Home, Preparing for a. Illustrated Article. Jan., 1893; pp. 286-290.
Crane, English Decoration and Walter. Illustrated Article. Dec., 1902; pp. 684-691.
Criminal Court Building, The New (New York). Illustrated Article. April, 1894; pp. 429-432.
Criterion Club Interiors. Illustrations. Feb., 1905; p. 164.
Critic and the Architect, The. Article. April, 1906; pp. 279-281.
Criticism that Counts. Article. April, 1901; pp. 398-405.
Cuban, Porto Rican and Philippine Architecture. Illustrated Article. Jan., 1900; pp. 277-314.
Culver, House and Garden of Mr. F. C. (Hadlyme, Conn.). Illustrated Article. Oct., 1906; pp. 335-340.
Curtis House, The (N. Y. C.). Illustrations. Dec., 1902; pp. 752-757.
Custom House of New York, The New. Illustrated Article. July, 1906; pp. 1-14.
Cutting, Residence of R. Fulton (N. Y. C.). Illustrations. April, 1902; pp. 59-63.

DAIKAN, The Period of (Japan). Illustrated Article. Feb., 1906; pp. 145-150.
Daily Record Building (Baltimore). Illustrated Article. Oct., 1892; pp. 213-215.
Davis, The House of F. H. (Elizabeth, N. J.). Illustrations. Aug., 1903; pp. 107-116.
Day & Brother, The Work of Frank Miles. Illustrated Article. May, 1904; pp. 397-421.
Deacon, The Residence of Mr. T. Harleston (Tuxedo, N. Y.). Illustrated Article. Oct., 1905; pp. 273-282.
Decoration of Costly Houses, The. Illustrated Article. May, 1903; pp. 396-422.
Decoration, Modern. Illustrated Article. Jan., 1897; pp. 243-255.
De Koven, House of Reginald (Washington, D. C.). Illustrated Article. Oct., 1904; pp. 308, 349, 363, 378.
De Lamar, The Residence of Mr. J. R. Illustration. June, 1905; p. 508.
Denver, Opening the Centre of. Illustrated Article. May, 1906; pp. 365-367.
Department Stores of New York City. Illustrated. Aug., 1902; pp. 286-303.
De Romans Building, Humbert (Paris). (Art Nouveau). Illustrated Article. May, 1902; pp. 50-66.
Design, Architectural, in France. Illustrated Article. Jan., 1902; pp. 37-59.
Design, Authority in Architectural. Article. July, 1896; pp. 71-76.
Design, English Suburban House. Illustrated Article. April, 1896; pp. 321-346.
Designing, School and Practice. Article. June, 1906; pp. 413-418.
De Vinne Building, The (N. Y. C.). Illustrated Article. Jan., 1904; pp. 1-17.
Difficulties of Modern Architecture, The. Illustrated Article. Oct., 1891; pp. 137-150.
Dining Room, A French, of the Upper Middle Class. Illustrated Article. July, 1895; pp. 34-45.
Dining Room, of Modern American Residences. Illustrated Article. Oct., 1904; pp. 296-406.
Doorways, Parisian, of the Eighteenth Century. Illustrations with Comment. Feb., 1906; pp. 123-134.
Dorilton, The (N. Y. C.). Illustrated Article. June, 1902; pp. 221-226.
Dufayel's Establishment (Paris). Illustrated Article. Sept., 1902; pp. 431-444.
Dyer, Work of J. Milton. Illustrated Article. Nov., 1906; pp. 384-403.

EARLY CHRISTIAN Architecture of Rome, The. Article. April, 1895; pp. 395-403.
East Hampton, Long Island, Summer Homes at. Illustrated Article. Jan., 1903; pp. 19-33.
Ecole des Beaux Arts. Buildings Erected by Designs Made by its Students. Illustrations. Jan., 1901; pp. 93-194.
Ecole des Beaux Arts.—Its Influence on American Architecture. Illustrated Article. Jan., 1901; pp. 65-90.
Ecole des Beaux Arts, Design in. Illustrated Article. Jan., 1901; pp. 56-64.
Ecole des Beaux Arts, From Nouveau to Ancien. Illustrated Article. Jan., 1901; pp. 34-55.
Ecole des Beaux Arts. Article. July, 1894; pp. 38-43.
Ecole des Beaux Arts. A History of the School. Illustrated Article. Jan., 1901; pp. 1-33.
Ecole des Beaux Arts. Illustrated Article. Jan., 1894; pp. 302-313.
Ecole des Beaux Arts. Illustrated Article. April, 1894; pp. 419-428.
Edison Building, The (N. Y. C.). Illustrated Article. Oct., 1891; pp. 133-136.
Education of an Architect, The. Article. July, 1895; pp. 82-92.
Egyptian Forms. Illustrated Article. April, 1895; pp. 477-506.
Egyptian Ornament. Illustrated Article. Oct., 1893; pp. 137-164.
Egyptian Ornament. Illustrated Article. Oct., 1892; pp. 165-183.
Eidlitz, Work of C. L. W. Illustrated Article. April, 1896; pp. 411-435.
Electric Lighting in the Albany Capitol. Illustrated Article. (Tech. Dept.). Oct., 1899; pp. 212-225.
Electric Lighting of Office Buildings. Illustrated Article. Oct., 1896; pp. 105-113.
Electroliers, Los Angeles. Notes and Comments. Illustrated. May, 1906; p. 398.
Elkins, Residence of George W. (Elkins Park, Pa.). Illustrated Article. Feb., 1904; pp. 93-121.
Elkins, Residence of the Late W. L. (Elkins Park, Pa.). Illustrated Article. Feb., 1904; pp. 93-121.
Emperor William of Germany. (A Captain of Culture). Article. June, 1902; pp. 238-240.
Engineering, Monumental. Illustrated Article. Oct., 1901; pp. 615-640.
England, Early Renaissance in. Illustrated Article. July, 1892; pp. 30-43.
English Georgian Architecture. Illustrated Article. Oct., 1899; pp. 97-108.
English House Architecture. Illustrated Article. Aug., 1906; pp. 81-91.
English Pleasure Gardens. Illustrated Article. April, 1903; pp. 335-348.
Entasis in Mediaeval Italian Architecture. Illustrated Article. July, 1897; pp. 63-96.
Entrances to Skyscrapers. Illustrations. April, 1900; pp. 363-374.
Erechtheum, The. Illustrated Article. Oct., 1902; pp. 498-513.
Eschweiler, The Work of Alexander C. (Milwaukee). Illustrated Article. March, 1905; pp. 208-230.
Executive Mansion, Washington, D. C. Illustrated Article. Oct., 1901; pp. 581-589.
Exposition of 1889. Palais des Industries Diverses. Illustrated Article. Jan., 1901; pp. 289-312.
Exposition of 1900, Paris. Illustrated Article. Jan., 1896; pp. 217-226.
Eyre, Wilson. Notes and Comments. Illustrated. Oct., 1905; p. 314.
Eyre, Work of Wilson. Illustrated Article. Oct., 1903; pp. 280-325.

FABRICS, Some American-Made. Illustrated Article. June, 1905; pp. 499-507.
Factories and Warehouses. Chicago Telephone Building; Eastman Kodak Building. Illustrated Article. May, 1906; pp. 368-375.

Fads in Architecture. Illustrated Article. July, 1891; pp. 48-61.
Fagin Building (St. Louis). Illustrated Article. April, 1893; pp. 470-472.
Farms, French. Illustrated Article. April, 1903; pp. 299-321.
Farmsteads, English. Illustrated Article. Oct., 1902; pp. 514-527.
Farnese Villa at Caprarola. Illustrated Article. Oct., 1900; pp. 113-127.
Fechheimer, Residence of Edwin S. (Winnetka, Ill.). Illustrated Article. Dec., 1904; pp. 557-560.
"Ferncliff," Court and Pool at. (Col. J. J. Astor). Illustrated Article. July, 1905; pp. 20-26.
Fireproof Building, An Unscientific Inquiry Into. Illustrated Article. Jan., 1900; pp. 229-253.
Fireproof Construction, Failure and Efficiency in. Illustrated Article. Jan., 1898; pp. 393-398.
Fireproof Country Houses, Need of. Article. June, 1905; pp. 509-512.
Fireproofing, Burnt Clay, and its Substitutes. Article. (Tech. Dept.). July, 1898; pp. 111-116.
Fireproofing, Simple Ways of. Illustrated Article. Feb., 1903; pp. 119-133.
First National Bank of Chicago, The Building of the. Illustrated Article. Jan., 1906; pp. 48-58.
Fish, Residence of Stuyvesant. (Newport, R. I.). Illustrations. April, 1899; pp. 430-433.
Fisher Marble Works, The. (N. Y. City). Notes and Comments. Illustrated. March, 1905; pp. 246-248.
Flagg, The Office of Ernest. Illustrations. Jan., 1901; pp. 239-244.
Flagg, Residence of Ernest. (Dongan, S. I.). Illustrations. April, 1902; pp. 76-81.
Flagg, The Works of Ernest. Illustrated Article. April, 1902; pp. 1-104.
Flagler, The Residence of H. M. (Palm Beach, Fla.). Illustrations. April, 1904; pp. 385-396.
Flatiron Building, The. Illustrated Article. Oct., 1902; pp. 528-536.
Flats, New York and French. Illustrated Article. July, 1892; pp. 55-64.
Florence, Mosaics in the Cathedrals at. Illustrated Article. Jan., 1895; pp. 277-281.
Flower, The Statue of the Late Roswell P. (Watertown, N. Y.). Illustrations. April, 1905; (frontispiece).
Fontainebleau, The Palace of. Illustrations. Oct., 1900; pp. 113-142.
Ford, Residence of Mrs. Paul Leicester. (N. Y. C.). Illustrations. July, 1903; pp. 62-69.
Fortress-Monasteries of the Holy Land. Illustrated Article. April, 1906; pp. 275-278.
Fountain at Georgian Court. Illustrated Article. Jan., 1903; pp. 70-73.
Fox, House of C. P. (Penllyn, Pa.). Illustrated Article. Oct., 1906; pp. 316-322.
Framingham, The Minute Man of. Notes and Comments. Nov., 1905; p. 399.
France and the United States. Notes and Comments. April, 1905; pp. 343-345.
France, Wooden Houses in, During the Middle Ages. Illustrated Article. April, 1900; pp. 333-362.
French Apartment House, No. 29 Ave. Henri Martin. Illustrated Article. May, 1903; pp. 423-432.
French Architecture, Modern. Illustrated Article. Oct., 1900; pp. 150-177.
French Architecture, Recent. Illustrations. July, 1898; pp. 68-81.
French Cathedrals. Article. July, 1893; pp. 87-95.
French Cathedrals. Illustrated Article. Oct., 1892; pp. 125-135.
French Cathedrals. Illustrated Article. Jan., 1893; pp. 303-323.
French Cathedrals. Bibliography and Statistics. Illustrated Article. April, 1894; pp. 387-418.
French Cathedrals. (The Cathedrals of Provence). Illustrated Article. July, 1896; pp. 20-27.
French Cathedrals (Cathedrals of Provence). Illustrated Article. Oct., 1896; pp. 144-162.
French Cathedrals (Cathedrals of Provence). Illustrated Article. Jan., 1897; pp. 323-334.
French Cathedrals (The Cathedrals of Provence). Illustrated Article. April, 1897; pp. 469-480.
French Cathedrals (The Domed Cathedrals). Illustrated Article. April, 1898; pp. 465-473.
French Cathedrals (The Maritime Cathedrals). Illustrated Article. Oct., 1897; pp. 124-142.
French Cathedrals (The Maritime Cathedrals). Illustrated Article. Jan., 1898; pp. 333-356.
French Cathedrals (Part XV.). Illustrated Article. July, 1898; pp. 49-65.
French Cathedrals (Part XVI.). Illustrated Article. Oct., 1898; pp. 168-179.
French Cathedrals (Senez, Apt.). Article. July, 1897; pp. 98-103.
French Farms. Illustrated Article. April, 1903; pp. 299-321.
French School, Its Influence on United States Architecture. Illustrated Article. Oct., 1894; pp. 210-228.
Frick Building, The (Pittsburg). Illustrations. April, 1904; pp. 328-335.
Frieze in Colors to Suit, A. Notes and Comments. Illustrated. Dec., 1905; pp. 472-475.
Frontenac Château (Quebec). Illustrated Article. June, 1899; pp. 28-33.
Frost and Granger, The Work of. Illustrated Article. Aug., 1905; pp. 114-145.
Furnishing of a City, The. Illustrated Article. Jan., 1903; pp. 42-48.
Furniture, Chippendale. Illustrated Article. April, 1897; pp. 429-438.
Furniture, The Evolution of. Illustrated Article. April, 1898; pp. 426-439.
Furniture, Examples of Historical. Illustrations. April, 1893; pp. 386-390.
Furniture Exhibition in Paris, The. Illustrated Article. Aug., 1903; pp. 126-134.
Furniture, French Dining Room. Illustrated Article. July, 1895; pp. 34-45.
Furniture, Modern French. Illustrated Article. Jan., 1901; pp. 245-255.
Furniture in the Modern House, Antique. Article. Oct., 1897; pp. 156-163.
Furniture, Studies in Antique. Illustrated Article. Oct., 1898; pp. 150-167.

GALLIERA Museum, The (Paris). Illustrated Article. Jan., 1903; pp. 1-18.
Gardens, American. Illustrated Article. May, 1903; pp. 436-452.
Gardens, City (Public). Illustrated Article. July, 1903; pp. 50-61.
Gardens, English Pleasure. Illustrated Article. April, 1903; pp. 335-348.
Gardens, Formal and Natural. Illustrated Article. June, 1902; pp. 174-194.
Garden, The Villa. Illustrated Article. Jan., 1902; pp. 60-68.
Gare de Lyon (Paris). Illustrated Article. Oct., 1902; pp. 491-497.
Gargoyles, Old and New. Illustrated Article. June, 1906; pp. 419-424.
Gates of Harvard University. Sept., 1906; pp. 200-201.
Gebhard, Residence of F. (N. Y. C.). Illustrated Article. Sept., 1904; pp. 204-206.
Geller, Residence of Mr. Fred (Bronxville, N. Y.). Illustrations. Aug., 1903; pp. 137-139.
General Theological Seminary (N. Y. C.). Illustrated Article. July., 1899; pp. 19-29.
Georgian Architecture, English. Illustrated Article. Oct., 1899; pp. 97-108.
Georgian Court, Fountain At. Illustrated Article. Jan., 1903; pp. 70-73.
Georgian Court (Lakewood). Illustrated Article. June, 1899; pp. 84-112.
Gibson, Residence of Charles Dana. Illustrations. Feb., 1904; pp. 172-179.
Gilbert, Work of C. P. H. Illustrations. Oct., 1899; pp. 166-173.
Ginn, Residence of Edwin (Winchester, Mass.). Illustrations. April, 1902; pp. 64-66.
Glass Houses, About. Notes and Comments. June, 1905; p. 518.
Golden Gate Park, San Francisco, Injury to Buildings in. Illustrated Article. Dec., 1906; pp. 513-514.
Goodyear, Charles. Notes and Comments. Illustrated. May, 1905; pp. 433-435.
Goodyear, A List of Articles on Architectural Refinements by William H. Nov., 1902; p. 620.
Gorham and Tiffany Buildings. Sept., 1903; pp. 214-221.
Gothic Dead, Is? Notes and Comments. Jan., 1906; pp. 66-67.
Gothic, English. Notes and Comments. Aug., 1905; pp. 169-171.

Gothic Revivals. Notes and Comments. Jan., 1906; p. 67.
Gouda, The Windows of (Holland). Illustrated Article. Jan., 1901; pp. 225-237.
Gould, Residence of George J (Lakewood, N. J., Georgian Court). Illustrated Article. June, 1899; pp. 84-112.
Greek Anthemion, Lotiform Origin of. Illustrated Article. Jan., 1894; pp. 263-290.
Greek Temple, The. Illustrated Article. June, 1905; pp. 441-470.
Greene and Greene, Bungalows by. Illustrated Article. Oct., 1906; pp. 306-315.
Grey, Mr. Elmer. Notes and Comments. Illustrated. Feb., 1905; pp. 153-154.
Gribbel, Residence of John (Wyncote, Pa.). Illustrated Article. Feb., 1904; pp. 93-121.
Griswold, The. A Study in Summer Hotel Building. Illustrated Article. May, 1906; pp. 344-360.

HAIGHT, Work of Charles C. Illustrated Article. July, 1899; pp. 1-83.
Hale Building, Philadelphia. Illustrated Article. Oct., 1893; pp. 207-210.
Hall of Modern American Residences, The. Illustrated Article. Oct., 1904; pp. 296-406.
Hall of Records, The New. Illustrated Article. May, 1905; pp. 383-387.
Hamburg, Germany, Residence, No. 9 Blumenstrasse. Illustrations. Jan., 1900; pp. 315-319.
Hanna, The House of Dan R. (Cleveland, O.). Illustrated Article. Jan., 1904; pp. 18-38.
Hapgood, The House of Mr. Norman (N. Y. C.). Illustrated Article. July, 1905; pp. 8-13.
Hardenbergh, A Conversation With H. J. Illustrated Article. May, 1906; pp. 376-380.
Hardenbergh, Work of H. J. Illustrated Article. Jan., 1897; pp. 335-375.
Harding and Gooch, The Work of. Illustrated Article. July, 1897; pp. 104-117.
Hardware, French. Illustrated Article (Tech. Dept.). March, 1904; pp. 285-292.
Harmonie Club House, The. Illustrated Article. April, 1906; pp. 237-243.
Harriman, The House of Mr. J. B. (Mt. Kisco, N. Y.). Illustrated Article. July, 1905; pp. 14-19.
Harrison, Residence of W. W. (Glenside, Pa.). Illustrated Article. Feb., 1904; pp. 93-121.
Hart Memorial Library (Troy, N. Y.). Illustrated Article. Sept. 1904; pp. 204-206.
Harvard Club. Sept., 1906; pp. 180-181.
Harvard Club House, The New (New York). Illustrated Article. March, 1906; pp. 194-198 and 206.
Harvard Gates. Sept., 1906; pp. 200-201.
Havemeyer, Residence of H. O. (N. Y. C.). Illustrations. April, 1892.
Havemeyer, Residence of H. O. (N. Y. C.). Illustrated Article. July, 1899; pp. 100-106.
Hay, The House of Mr. John, Secretary of State (Wash., D. C.). Illustrations. Jan., 1905; pp. 80-82.
Heating of Buildings, The. Article. Oct., 1895; pp. 204-211.
Helicon Hall (Englewood, N. J.). Illustrations. Jan., 1896; pp. 303-306.
Herts and Tallant, The Works of. Illustrated Article. Jan., 1904; pp. 55-91.
High Building, The Art of the. Illustrated Article. May, 1904; pp. 445-466.
Hildesheim and Its Churches. Illustrated Article. July, 1892; pp. 9-29.
History from a Garret. Illustrated Article. July, 1899; pp. 51-64.
Historical Monuments of France, The. Article. Jan., 1895; pp. 308-311.
Hoban, James, of Charleston, S. C. Illustrated Article. Oct., 1901; pp. 581-589.
Hoff, Residence of Mr. and Mrs. John J. (Paris). Illustrated Article. Feb., 1903; pp. 97-118.
Hoffman, Residence of W. M. V. (N. Y. C.). Illustrated Article. Sept. 1904; pp. 204-206.
Holy Trinity Church (N. Y. C.). Illustrated Article. Sept., 1904; pp. 204-206.
Hoover, Residence of Maurice (Wyncote, Pa.). Illustrated Article. Feb., 1904; pp. 93-121.
Horizontal Curves in the Maison Carrée at Nimes. Illustrated Article. April, 1895; pp. 446-463.
Horizontal Curves in Mediaeval Italian Architecture. Illustrated Article. April, 1897; pp. 481-508.

HOSPITALS.

Hospital, An Ideal. Illustrated Article. Nov., 1905; pp. 376-383.
Hospital, St. Margaret Memorial (Pittsburg). Illustrations. April, 1902; pp. 23-25.
Hospitals in Europe, Modern. Illustrated Article. July, 1896; pp. 28-51.
Mount Sinai Hospital. Illustrated Article. Nov., 1905; pp. 367-375.
St. Luke's Hospital (N. Y. C.). Illustrations. April, 1902; pp. 13-22.

Hotchkiss, The Residence of Mr. Horace L. (Rye, N. Y.). Illustrations. July, 1904; pp. 68-71.

HOTELS.

Apartment Hotels in New York City. Illustrated Article. Jan., 1903; pp. 85-91.
Astor, The New Hotel (N. Y. C.). Illustration. Aug., 1904; p. 115.
Auditorium (Chicago). Illustrated Article. Feb., 1896.
Belmont Hotel. Illustrated Article. July, 1906; pp. 63-69.
Belvedere Hotel (Baltimore). Illustrated Article. March, 1905; pp. 167-188.
Imperial (McKim, Mead & White). Illustrated Article. May, 1895.
Mills Hotels, The (N. Y. C.). Illustrations. April, 1902; pp. 41-47.
Mills, The (N. Y. C.). Illustrations. April, 1902; pp. 41-47.
Navarre, Hotel. Illustrated Article. Sept., 1904; pp. 204-216.
New; New York. Illustrated Article. Nov., 1902; pp. 621-635.
Old; New York. Illustrated Article. Oct., 1902; pp. 459-471.
Paris Hotel de Ville. Illustrated Article. March, 1904; pp. 245-259.
Prince George Hotel, The. (N. Y. C.). Notes and Comments. Illustrated. Dec., 1905; pp. 476-480.
St. Regis, The Hotel. Illustrated Article. June, 1904; pp. 552-600.
Schenley, The Hotel (Pittsburg). Illustrated Article. Aug., 1904; pp. 83-114.
Somerset, The Hotel (N. Y. C.). Illustrated Article. March, 1903; pp. 292-297.
The New York Family. Illustrated Article. Oct., 1901; pp. 700-704.
Walton, The Hotel (N. Y. C.). Illustrations. April, 1906; p. 308.
Willard Hotel, The New (Wash., D. C.). Illustrated Article. March, 1905; pp. 167-188.
Windsor Hotel, Addition to the (Montreal, P. Q.). Illustration. May, 1906; p. 394.

House Architecture, English. Illustrated Article. Aug., 1906; pp. 81-91.
Household Furnishings. Article. Oct., 1896; pp. 97-104.
Howe House, The. (Evanston, Ill.). Illustration. Feb., 1905; p. 163.
Huhn, Residence of George A. (Philadelphia). Illustrated Article. Feb., 1904; pp. 93-121.
Humboldt Savings Bank Building (San Francisco). Illustration. June, 1906; Frontispiece.
Hunt, Buildings by R. M. Illustrations. Jan., 1901; pp. 93-110.
Hunt, Houses of Myron. Notes and Comments. Illustrated. Feb., 1905; pp. 154-156.
Hunt, The Work of R. M. Illustrated Article. Oct., 1895; pp. 97-180.
Hunt & Grey, California Houses by. Illustrated Article. Oct., 1906; pp. 281-295.
Huntington, Residence of C. P. (N. Y. C.). Illustrated Article. June, 1898; pp. 84-92.

Hutcheson, Residence of Rev. Joseph (Warren, R. I.). Illustrated Article. Oct., 1906; pp. 269-280.
Hutchinson, The Summer Home of Mr. Chas. L. (Geneva Lake, Wis.). Illustrated Article. Feb., 1905; pp. 126-136.

IMMIGRANT STATION, The New York. Illustrated Article. Dec., 1902; pp. 726-733.
Indianapolis Court House and Post Office. Illustrated Article. June, 1906; pp. 437-442.
Ingalls Building (Cincinnati). Illustrated Article. June, 1904; pp. 531-544.
Interior Views of the House of Henry W. Poor (N. Y. C.). Illustrated Article. July, 1905; pp. 34-48.
Interiors. Illustrated Article. Oct., 1894; pp. 157-190.
Interiors, Modern French. Illustrated Article. July, 1905; pp. 74-85.
Interiors, Some Interesting. The Morse House (Newport, R. I.). House of Mr. Victor Sorchan (N. Y. C.). Illustrated Article. July, 1905; pp. 51-59.
International Banking and Trust Company's Building (N. Y. C.). Illustrated Article. April, 1900; pp. 424-428.
Ionic Capital, Lotiform, Origin of. Illustrated Article. Oct., 1893; pp. 137-164.
Iron construction in New York City. Illustrated Article. April, 1892; pp. 448-468.
Iron Work, Decorative. Illustrated Article. July, 1894; pp. 45-74.
Italian Architecture, Modern. Illustrated Article. April, 1901; pp. 337-360.
Italian Architecture, Modern. Illustrated Article. Sept., 1902; pp. 356-374.
Italian Cathedrals. Illustrated Article. Oct., 1898; pp. 125-149.
Italy, Modern Architecture in (III.). Illustrated Article. Nov., 1903; pp. 392-407.

JACKSON, The House of Mr. E. E. (Brooklyn, N. Y.). Notes and Comments. Illustrated. Jan., 1905; pp. 62-63.
Jacobean Office Building, A. (Bush Terminal Co., N. Y. C.). Notes and Comments. June, 1906; pp. 472-473.
Jacobs, The House of Dr. (Newport, R. I.). Illustrated Article. April, 1905; pp. 271-293.
Jambs, Moulded. Notes and Comments. Illustrated. Feb., 1905; pp. 146-148.
Japan, China and Corea, Architecture of. Illustrated Article. Jan., 1896; pp. 288-297.
Japanese Architecture. Illustrated Article. April, 1896; pp. 382-392.
Japanese Art and Architecture. Notes and Comments. March, 1906; p. 230.
Japanese House (Fall River, Mass.). Illustrated Article. July, 1898; pp. 82-91.
Japanese Houses. Illustrated Article. Jan., 1906; pp. 1-26.
Japanese Room in the Marquand House. Illustrated Article. Sept., 1905; pp. 192-201.
Japanese Temple at Nikko. Illustrated Article. Oct., 1894; pp. 191-209.
Jefferson County, Colonial Houses in. Illustrated Article. Aug., 1906; pp. 103-115.
Jenks, House of Mr. Livingston (San Francisco, Cal.). Illustrated Article. Dec., 1906; pp. 489-502.
Jennings, The Residence of O. G. (N. Y. C.). Illustrations. Oct., 1900; pp. 214-224.
Jennings, Residence of O. G. (N. Y. C.). Illustrations. April, 1902; pp. 54-58.
Jersey City, New Jersey, The New City Hall. Illustrated Article. July, 1895; pp. 77-81.
Jewelry, L'Art Nouveau. Illustrated Article. May, 1902; pp. 67-70.
Jewelry, The Modern Style in. Illustrated Article. Sept., 1903; pp. 205-218.
Jones, The Residence of the Hon. B. F. (Sewickley, Pa.). Illustrated Article. Aug., 1904; pp. 83-114.
Judge Building, The (N. Y. C.). Illustrated Article. Jan., 1904; pp. 1-17.
Judson Memorial Church. Illustrated Article on Work of McKim, Mead & White. May, 1895; pp. 9-12.

KANSAS CITY, Development of Architecture in. Illustrated Article. Feb., 1904; pp. 134-157.
Kenosha, Wis., Houses by Pond & Pond. Illustrated Article. Oct., 1906; pp. 341-346.
Kent Building, The (Chicago). Notes and Comments. Illustrated. Jan., 1905; pp. 66-68.
Kimball and Thompson, The Work of. Illustrated Article. April, 1898; pp. 479-518.
Kip House, The (Orange, N. J.). Illustrated Article. Oct., 1904; pp. 298 and 324-325.
Kirkwood, The (Camden, S. C.). Illustrated Article. Aug., 1904; pp. 83-114.
Kitchen of Modern American Residences. Illustrated Article. Oct., 1904; pp. 296-306.
Knickerbocker Trust Co., The Building of the. Illustrated Article. May, 1904; pp. 431-444.
Knight, The House of Mr. E. C. Illustrations. Jan., 1905; pp. 58-59.
Knight, Residence of E. C., Jr. (Phila.). Illustrated Article. Feb., 1904; pp. 93-121.
Kohn & Son, Building of Theodore A. Illustration. June, 1905; p. 522.

L'ART NOUVEAU. Illustrated Articles. June, 1902; pp. 121-153.
L'Art Nouveau. Illustrated Article. Aug., 1902; pp. 279-285.
L'Art Nouveau Jewelry. Illustrated Article. May, 1902; pp. 67-70.
L'Art Nouveau at Turin (Part I.). Illustrated Article. Nov., 1902; pp. 584-599.
L'Art Nouveau at Turin (Part II.). Illustrated Article. Dec., 1902; pp. 734-750.
La Poignée, A New Artistic Society in Paris. Illustrated Article. June, 1903; pp. 535-547.
Lake Forest Town Hall. Notes and Comments. Illustrated. Oct., 1905; pp. 310-311.
Lamp-posts, Signs and Kiosks, Paris. Illustrated Article. Jan., 1903; pp. 42-48.
Landscape Architects, Architects and. Article. Dec., 1902; pp. 762-764.
Landscape Gardening in California. Notes and Comments. June, 1906; pp. 473-474.
Langeais, Château of. Illustrated Article. May, 1905; pp. 353-382.
Lante, The Villa. Illustrated Article. Oct., 1898; pp. 117-124.
Lawyers' Club, New York City (in the Western National Bank). Illustrated Article. June, 1898; pp. 94-95.
Leaning Facade at Genoa, A Renaissance. Illustrated Article. Nov., 1902; pp. 600-619.
Lee, House of Mr. Frederick S. (N. Y. C.). Illustrated Article. Nov., 1906; pp. 427-436.
Leland Stanford University. Illustrated Article. July, 1896; pp. 48-52.
LIBRARIES, PUBLIC.
Aguilar. Illustrated Article. Jan., 1904; pp. 55-91.
Boston Public. Sept., 1906; pp. 162-164.
Columbia University. Sept., 1906; pp. 178-179.
Congressional (Wash., D. C.). Illustrations. Jan., 1901; pp. 154-159.
Coram. Illustrated Article. Jan., 1904; pp. 55-91.
Hart Memorial (Troy, N. Y.). Illustrated Article. Sept., 1904; pp. 204-206.
Libraries by McKim, Mead & White. Boston Public, Naugatuck (Conn.). Illustrated Article. May, 1895.
Libraries in New York City, The Carnegie. Notes and Comments. Illustrated. March, 1905; pp. 237-246.
Library of Congress, The New. Illustrated Article. Jan., 1898; pp. 295-332.
Sargent Decorations in Boston Public. Illustrated Article. May, 1904; pp. 423-430.
The Morgan, and Art Museum. Illustrations. May, 1906; pp. 388-393.
The New York Public. Illustrations. Jan., 1898; pp. 385-391.

Lighting, Improvement of the Chandelier for Gas and Electric. Illustrated Article. Aug., 1903; pp. 117-125.

Living Room of Modern American Residences. Illustrated Article. Oct., 1904; pp. 296-406.
Loggia Degli Osii (Milan). Notes and Comments. Illustrated. Feb., 1905; pp. 140-141.
Loie Fuller in French Sculpture. Illustrated Article. March, 1903; pp. 270-278.
London, Architecture in. Illustrated Article. July, 1895; pp. 1-33.
London, Brick Building in. Illustrated Article. Dec., 1903; pp. 445-452.
Lot, The Passing of the 25x100, in New York City. Article. Oct., 1901; pp. 711-713.
Lotus, The Grammar of the. Illustrated Article. Oct., 1892; pp. 165-183.
Lyceum Theatre, The New. Illustrated Article. Jan., 1904; pp. 55-91.

McGILL, RESIDENCE of Dr. J. A. (Chicago). Illustrated Article. Feb., 1906; pp. 93-101.
McCall, Residence of John (Long Branch, N. J.). Illustrated Article. Oct., 1904; pp. 393-406.
McKim, Mead & White, The Work of. Illustrated Article. May, 1895.
McKim, Mead & White, The Work of. Illustrated Article. Sept., 1906.
Mackay, Residence of Clarence H. (Roslyn, L. I.). Illustrated Article. Oct., 1904; pp. 299-307.
Mackay, Country House of Mr. Clarence H. (Roslyn, L. I.). Illustrated Article. Dec., 1904; pp. 531-555.
Madison Square Garden. Illustrated Article on Work of McKim, Mead & White. May, 1895; pp. 13-15.
Madlener House, Chicago, The. Illustrated Article. June, 1905; pp. 491-498.
Magnus, The House of Mr. August (Winnetka, Ill.). Illustrated Article. Oct., 1906; pp. 223-234.
Mairies of Paris, The. Illustrated Article. April, 1898; pp. 401-425.
Maison Carrée at Nimes, Horizontal Curves in the. Illustrated Article. April, 1895; pp. 446-463.
Maison Francois Premier (Paris). Illustrated Article. June, 1904; pp. 487-508.
Majestic Building, The (Chicago). Notes and Comments. Illustrated. June, 1906; pp. 474-476.
Maloney, Residence of Martin (Spring Lake, N. J.). Illustrated Article. Feb., 1904; pp. 93-121.
Manor, Cleeve Prior (England). Illustrations. July, 1900; pp. 86-91.
Marienburg. Illustrated Article. July, 1899; pp. 1-20.
Marietta, Ohio, First Congregational Church of. Illustrated Article. Aug., 1906; pp. 116-120.
Mason, The House of Miss. Illustrations. Jan., 1905; pp. 60-61.
Mathews, Work of Edgar A. Illustrated Article. July, 1906; pp. 46-52.
Mausoleums. Illustrations. July, 1900; pp. 22-54.
Mausoleums by Adler & Sullivan. Illustrated Article. Feb., 1896.
Maxwell, Residence of Robert (Rockville, Conn.). Illustrated Article. March, 1904; pp. 182-244.
Mediaeval Art, A New Manual on. Notes and Comments. Illustrated. April, 1905; pp. 336-340.
Medicean Tombs. Illustrated Article. March, 1903; pp. 207-220.
Medinah Temple (Chicago). Illustrated Article. July, 1894; pp. 82-85.
Mercantile Plant, The Building of a Great (Sears, Roebuck & Co., Chicago). Illustrated Article. April, 1906; pp. 265-274.
Mercantile Plant, Designing a Great (Sears, Roebuck & Co., Chicago). Illustrated Article. June, 1906; pp. 403-412.
Metal Work, Ornamental. Illustrated Article. June, 1904; pp. 509-530.
Metal Work and Wire Glass, Ornamental. Illustrated Article. Aug., 1906; pp. 137-145.
Metals & Decoration, The Future of. Illustrated Article. Aug., 1904; pp. 141-159.
Metropolitan Club. Illustrated Article on Work of McKim, Mead & White. May, 1895; pp. 25-35.
Metropolitan Museum of Art, The New. Illustrated Article. Aug., 1902; pp. 304-315.
Michelangelo, New light on. Illustrated Article. Nov., 1903; pp. 379-391.
Milan International Exhibition. Illustrated Article. Nov., 1906; pp. 353-368.
Mills Hotels, The (N. Y. C.). Illustrations. April, 1902; pp. 41-47.
Minnesota, The New State Capitol of. Illustrated Article. Aug., 1905; pp. 95-113.
Minnesota State Capitol. Illustrated Article. Jan., 1906; pp. 31-36.
Missions of the U. S., Spanish-Mexican. Illustrated Article. Sept., 1903; pp. 181-204.
Modern Architecture Focussed—A Long-felt Want. Article. July, 1897; pp. 118-120.
Modern Architecture, Good Things in. Illustrated Article. July, 1898; pp. 92-110.
Modern Architecture in Italy (III). Illustrated Article. Nov., 1903; pp. 392-407.
Monastic Architecture in Russia. Illustrated Article. July, 1899; pp. 21-49.
Mont St. Michel. Illustrated Article. Jan., 1902; pp. 10-36.
Montmartre, Church of (Paris). Illustrated Article. July, 1893; pp. 1-28.
Montreal, Bank of (Montreal, P. Q.). Sept., 1906; pp. 203-205.
Moore, Estate of James Hobart (Lake Geneva, Wis.). Illustrated Article. March, 1904; pp. 260-273.
Moreau-Vauthier, Sculpture of. Illustrated Article. March, 1903; pp. 221-233.
Morgan, The House of Mr. E. D. (Newport). Illustrations. Jan., 1905; pp. 50-54.
Morgan, House of Mr. E. D. (Westbury, L. I.). Sept., 1906; pp. 230-231.
Morgan Library and Art Museum, The. Illustrations. May, 1906; pp. 388-393.
Morris, The Art of William. Illustrated Article. April, 1898; pp. 440-461.
Mortimer, The House of Mr. Richard (Tuxedo, N. Y.). Illustrated Article. Dec., 1905; pp. 460-470.
Mosaic, Cosmati. Illustrated Article. June, 1902; pp. 202-220.
Mosaics, Modern. Illustrated Article. Jan., 1894; pp. 314-324.
Mosaics, Modern. Illustrated Article. Jan., 1895; pp. 277-281.
Mosaics, Modern, in England. Illustrated Article. July, 1892; pp. 79-88.
Mosaics, Italian. Illustrated Article. Jan., 1893; pp. 291-302.
Mosaics in St. Agnes' Chapel. Illustrations. Jan., 1893; pp. 258-263.
Mosques and Cathedrals, Spanish. Illustrated Article. July, 1894; pp. 14-35.
Mouldings, Suggested. Notes and Comments. Illustrated. Jan., 1905; pp. 68-70.
Mount Sinai Hospital. Illustrated Article. Nov., 1905; pp. 367-375.
Municipal Progress Since 1880. Notes and Comments. March, 1906; pp. 234-235.
Mural Painting and a Word to Architects. Illustrated. July, 1901; pp. 509-524.
Museum, Architecture at the South Kensington. Illustrated Article. April, 1899; pp. 389-406.
Museum, Galliéra (Paris). Illustrated Article. Jan., 1903; pp. 1-18.
Museum, Metropolitan, of Art, The New. Illustrated Article. Aug., 1902; pp. 304-315.
Museum of Natural History (N. Y. C.). Illustrated Article. April, 1900; pp. 375-402.
Museum of Natural History (Paris). Illustrated Article. July, 1900; pp. 55-75.
Museum of Photographs, A. Article. Aug., 1902; pp. 348-350.
Music Hall, The New Thomas (Chicago). Illustrated Article. Aug., 1904; pp. 160-164.
Musical Ideals of Architecture. Article. Jan., 1895; pp. 283-298.
Musical Ideals of Architecture, The. Article. April, 1895; pp. 379-392.

NARCISSUS, VILLA CAPRI. Illustrated Article. May, 1902; pp. 71-92.
Nassau-Beekman, The. Illustrated Article. May, 1902; pp. 93-98.
National American Architecture. Article. Oct., 1893; pp. 121-132.
National Biscuit Co., The Factory of the. Notes and Comments. Illustrated. Jan., 1905; pp. 64-65.
National Park Bank, The New. Illustrated Article. April, 1905; pp. 318-328.
Natural History Museum (N. Y. C.). Illustrated Article. April, 1900; pp. 375-402.

Natural History Museum (Paris). Illustrated Article. July, 1900; pp. 55-75.
Naugatuck, Conn., Public Square in. Illustration. Feb., 1906; frontispiece.
Naugatuck High School and Buckingham Building (Waterbury, Conn.). Illustrated Article. (Tech. Dept.). Feb., 1906; pp. 163-164.
Naval Academy Designs, The (Annapolis, Md.). Illustrated Article. April, 1902; pp. 82-101.
Navarre, Hotel. Illustrated Article. Sept., 1904; pp. 204-216.
Nénot, The Work of. Illustrated Article. Aug., 1902; pp. 245-269.
Neo Byzantine Architecture. Article. April, 1892; pp. 485-495.
New Amsterdam Theatre. Illustrated Article. Jan., 1904; pp. 55-91.
Newborg, House of Mr. M. (N. Y. C.). Illustrated Article. May, 1905; pp. 400-409.
New Mexican Architecture. Illustrated Article. June, 1906; pp. 467-469.
Newport Casino. Illustrated Article. Sept., 1906; pp. 156-158.
New York as the American Metropolis. Article. March, 1903; pp. 193-206.
New York City, Design for Entrance Gate to (Battery). Illustration. Aug., 1903; p. 145.
New York City Hall Competition. Article. Oct., 1893; pp. 213-214.
New York Club, The. Illustration. April, 1906; p. 324.
New York House, The New. Illustrated Article. Feb., 1906; pp. 83-103.
New York Orphan Asylum (Near Hastings-on-the-Hudson). Illustrations. Aug., 1903; pp. 140-142.
New York Public Library, The. Illustrations. Jan., 1898; pp. 385-391.
New York State Capitol (Albany, N. Y.). Illustrated Article. Oct., 1899; pp. 142-157.
New York University. Sept. 1906; pp. 182-184.
Nevill Holt House. Illustrated Article. Oct., 1897; pp. 143-155.
Nikko, Temple of the Tokugawa at. Illustrated Article. Oct., 1894; pp. 191-209.
No. 4 Avenue d' Jena, Residence, Paris. Illustrations. July, 1899; pp. 66-76.
Norrie, Residence of A. Lanfear (N. Y. C.). Illustrations. Dec., 1903; pp. 454-461.
North Church, Paul Revere's Old. Illustrated Article. March, 1906; pp. 214-222.
Norway, Timber Churches in. Illustrated Article. Aug., 1906; pp. 93-102.

OASIS, AN ARCHITECTURAL (Naugatuck, Conn.). Illustrated Article. Feb., 1906; pp. 135-144.
Ochre Court (Newport, R. I.), Residence of Ogden Goelet. Illustrated Article on the Work of R. M. Hunt. Oct., 1895; pp. 136-143.
Oelrichs, The House of Mr. Herman (Newport, R. I.). Illustrations. Jan., 1905; pp. 55-57.

OFFICE AND COMMERCIAL BUILDINGS.

Barclay Building, The (N. Y. C.). Illustrations. Sept., 1905; p. 232.
Blair Building (N. Y. C.). Illustrated Article. Dec., 1903.
Broadway Buildings, Nos. 26 to 42. Notes and Comments, Illustrated. Feb., 1905; pp. 142-146.
Carleton Building, The (St. Louis). Notes and Comments, Illustrated. June, 1905; pp. 514-516.
Chicago Board of Trade Building. Illustrated Article. July, 1893; pp. 96-100.
Commercial Buildings, Some New York: The Street & Smith Building; Stables for Arnold, Constable Co. Notes and Comments, Illustrated. Sept., 1905; pp. 233-238.
Daily Record Building (Baltimore). Illustrated Article. Oct., 1892; pp. 213-215.
De Romans Building, Humbert (Paris). (Art Nouveau.) Illustrated Article. May, 1902; pp. 50-66.
De Vinne Building, The (N. Y. City). Illustrated Article. Jan., 1904; pp. 1-17.
Fagin Building, St. Louis. Illustrated Article. April, 1893; pp. 470-472.
Flatiron Building, The. Illustrated Article. Oct., 1902; pp. 528-536.
Frick Building, The (Pittsburg). Illustrations. April, 1904; pp. 328-335.
Hale Building, Philadelphia. Illustrated Article. Oct., 1893; pp. 207-210.
Ingalls Building (Cincinnati). Illustrated Article. June, 1904; pp. 531-544.
International Banking & Trust Company's Building, N. Y. C. Illustrated Article. April, 1900; pp. 424-428.
Jacobean Office Building, A (Bush Terminal Co., N. Y. C.). Notes and Comments. June, 1906; pp. 472-473.
Judge Building, The (N. Y. C.). Illustrated Article. Jan., 1904; pp. 1-17.
Kent Building, The (Chicago). Notes and Comments, Illustrated. Jan., 1905; pp. 66-68.
Kohn & Son, Building of Theodore A. Illustration. June, 1905; p. 522.
Majestic Building, The (Chicago). Notes and Comments, Illustrated. June, 1906; pp. 474-476.
Medinah Temple (Chicago). Illustrated Article. July, 1894; pp. 82-85.
Office Building, The Economy of The (No. 1). Illustrated Article. April, 1904; pp. 312-327.
Office Buildings by D. H. Burnham & Co.: Chronicle Building, San Francisco; Herald Building, Chicago; Western Union Building, Chicago; The Rookery, Chicago; Masonic Tempie, Chicago; Woman's Temple, Chicago; Monadnock Building, Chicago; New Marshall Field Building, Chicago. Illustrated Article. Feb., 1896; pp. 49-72.
Office Buildings by George B. Post: Mills Building, New York; Prudential Life Insurance Building, Newark; Erie County Savings Bank Building, Buffalo; Park Building, Pittsburg; Schermerhorn Building, New York; Produce Exchange Building, New York; Cotton Exchange Building, New York; Post Building, New York; The Pulitzer Building, New York; New York Times Building, New York; Havemeyer Building, New York; Union Trust Building, New York; St. Paul Building, New York. Illustrated Article. June, 1898.
Office Buildings by McKim, Mead & White: Cable Building (N. Y. C.); Herald Building (N. Y. C.); Warren Building (N. Y. C.); Judge Building (N. Y. C.); Goelet Building (N. Y. C.); N. Y. Life Insurance Building (Kansas City). Illustrated Article. May, 1895.
Office Buildings, Design of Our Tall. Illustrated Article. Oct., 1901; pp. 705-711.
Office Buildings, Limiting Conditions of Modern. Illustrated Article. April, 1893; pp. 445-468.
Office Buildings, New York City. Illustrations. April, 1897; pp. 460-468.
Office Buildings, Planning of. Illustrated Article. July, 1893; pp. 72-78.
Office Buildings, Planning of. Illustrated Article. Oct., 1893; pp. 169-174.
Office Buildings, Planning of. Illustrated Article. April, 1894; pp. 436-440.
Paper Mills Building, The (Chicago). Notes and Comments, Illustrated. Feb., 1906; pp. 151-152.
Railway Exchange Building, The (Chicago). Notes and Comments, Illustrated. May, 1905; pp. 422-425.
Record Building, The (Philadelphia). Illustrated Article. Jan., 1892; pp. 261-264.
Rector Building, The (Chicago). Notes and Comments, Illustrated. Feb., 1905; pp. 156-157.
Reliance Building, Chicago. Illustrated Article. Jan., 1895; pp. 299-306.
Rockefeller Building (Cleveland). Illustration. March, 1905; p. 257.
Royal Insurance Building, The (N. Y. C.). Illustrated Article. May, 1906; pp. 361-364.
Schlesinger & Mayer Building, The (Chicago). Illustrated Article. July, 1904; pp. 53-67.
Sears, Roebuck Building, The (Chicago). Notes and Comments. Illustrated. Aug., 1905; pp. 167-169; also April, 1906; pp. 265-274; June, 1906; pp. 304-312.
Sienna Chamber of Commerce (Italy). Notes and Comments. Illustrated. Oct., 1905; pp. 305-307 and 308.
Singer Building, The (561-563 Broadway, N. Y. C.). Illustrated Article. March, 1904; pp. 274-284.

Skyscraper, A Rational (Blair Building, N. Y. C.). Illustrated Article. March, 1904; pp. 274-284.
Skyscraper, Evolution of a (N. Y. Times Bldg). Illustrated Article. Nov., 1903; pp. 329-343.
Sperling & Linden Building, The (Chicago). Notes and Comments, Illustrated. Dec., 1905; pp. 482.
Stock Exchange, The New York. Illustrated Article. July, 1901; pp. 525-555.
Stock Exchange, The New (N. Y. C.). Illustrated Article. Sept., 1902; pp. 413-420.
Stock Exchange, Facade of the New York. Illustrated Article. Nov., 1904; pp. 464-482.
Studebaker Building (Kansas City). Notes and Comments, Illustrated. Oct., 1905; pp. 311-313.
Tiffany and Gorham Buildings. Sept., 1906; pp. 214-221.
Times Building, The (N. Y. C.). Illustrations. Aug., 1903; pp. 152-153.
Transit Building, The (N. Y. C.). Illustration. Jan., 1903; p. 74.
U. S. Leather Co.'s Building (N. Y. C.). Notes and Comments, Illustrated. Nov., 1905; pp. 389-391.
Wells Building, The (Milwaukee). Illustration. Feb., 1905; p. 151.
Whitehall Building, The (N. Y. C.). Illustrated Article. July, 1903; pp. 70-73.
Whittemore Building, The. Notes and Comments. Oct., 1905; pp. 307 and 309.
Whittemore Building, The (Chicago). Notes and Comments, Illustrated. June, 1905; pp. 516-517.
Williams Building, The (N. Y. C.). Notes and Comments. Feb., 1906; pp. 151, 153, 154.
Wolfe Building, New York City. Illustrated Article. Jan., 1896; pp. 299-302.

Olympia State Capitol (Washington). Illustrations. April, 1902; pp. 11-12.
Open-Air Life in a Great City (Paris). Illustrated Article. Feb., 1903; pp. 157-168.
Ornament, Architectural. Illustrated Article. July, 1894; pp. 88-116.
Ornament, Conventional. Illustrated Article. April, 1893; pp. 391-418.
Ornament Motives, Trefoil and Palmette. Illustrated Article. July, 1898; pp. 27-47.
Outdoor Art, Informal. Illustrated Article. March, 1903; pp. 259-269.

PAINTING, CONSIDERATIONS ON (By John La Farge). Illustrated Article. (Oct., 1896; pp. 220-232.
Painting, Decorative, in Mantua, Italy. Illustrated Article. Sept., 1905; pp. 202-210.
Painting and Illustration (C. D. Gibson). Notes and Comments. Jan., 1906; pp. 70-71.
Painting, The Influence of the Early Renaissance on. Illustrated Article. Oct., 1894; pp. 157-190.
Palladio and His Work. Illustrated Article. Jan., 1898; pp. 241-256.
Palladio and His Work. Illustrated Article. Jan., 1899; pp. 332-345.
Pan-American Exposition. Illustrated Article. Oct., 1901; pp. 590-614.
Pantry, The American. Illustrated Article. Sept., 1905; pp. 225-231.
Paper Mills Building, The (Chicago). Notes and Comments, Illustrated. Feb., 1906; pp. 151-152.
Paris Apartment House. Illustrated Article. Jan., 1893; pp. 324-331.
Paris, Apartment Houses in. Illustrated Article. April, 1896; pp. 347-361.
Paris, Art in. Illustrated Article. Nov., 1902; pp. 573-583.
Paris, Artistic Bits in. Illustrations. July, 1894; pp. 75-81.
Paris, Corner Houses in. Illustrated Article. Jan., 1897; pp. 310-322.
Paris, Ecole des Beaux Arts Illustrations. Illustrated Article. Jan., 1901; pp. 1-33.
Paris Exposition of 1900. Illustrated Article. Jan., 1896; pp. 217-226.
Paris Hotel de Ville. Illustrated Article. March, 1904; pp. 245-259.
Paris, How a Rich Man May Live in. Illustrated Article. Aug., 1903; pp. 79-91.
Paris, Living in Paris on an Income of $3,000 a Year (Part I.). Illustrated Article. April, 1903; pp. 349-357.
Paris, How and Where to Live in Paris on $3,000 a Year (Part II.). Illustrated Article. May, 1903; pp. 423-432.
Paris, How to Live in Paris on $3,000 a Year (Part III.). Illustrated Article. June, 1903; pp. 548-554.
Paris, The Mairies of. Illustrated Article. April, 1898; pp. 401-425.
Paris, Parks, Gardens and Squares in. Illustrated Article. Feb., 1903; pp. 157-168.
Paris, The Plan of a City. Illustrated Article. Dec., 1902; pp. 692-703.
Paris Residence, Bois de Boulogne. Illustrations. Oct., 1892; pp. 186-191.
Paris Residence, No. 4 Avenue d'Jena. Illustrations. July, 1899; pp. 66-76.
Paris Residences. Illustrated Article. Oct., 1894; pp. 210-228.
Parisian House, The Building of a. Illustrated Article. Sept., 1903; pp. 157-165.
Parks, Gardens and Squares (Paris). Illustrated Article. Feb., 1903; pp. 157-168.
Passy, The Parisian Suburb of. Illustrated Article. Dec., 1902; pp. 669-683.
Patton, Residence of Mayor (Evanston, Ill.). Illustrated Article. April, 1904; pp. 361-384.
Paul, Residence of James W., Jr. (Radnor, Pa.). Illustrated Article. Feb., 1904; pp. 93-121.
Pavilions in the New York Parks. Notes and Comments, Illustrated. March, 1905; pp. 248-254.
Peabody & Stearns, The Work of. Illustrated Article. July, 1896; pp. 53-97.
Peacock, Residence of Alexander (Pittsburg). Illustrations. Oct., 1903; pp. 262-278.
Peddie Memorial Church (Newark). Illustrated Article. July, 1892; pp. 89-92.
Pennsylvania Railroad Station, The New (N. Y. C.) (Drawings). Sept., 1906; pp. 239-243.
Pennsylvania, The University of. Illustrated Article. Nov., 1904; pp. 407-438.
Pepper, Residence of John W. (Jenkintown). Illustrated Article. Oct., 1903; pp. 280-325.
Pepper, House of John W. (Jenkintown, Pa.). Illustrations. Nov., 1906; pp. 412-418.
Percy, The House of Dr. (Galesburg, Ill.). Illustrations. April, 1906; pp. 302-305.
Persian Tiles. Illustrated Article. Aug., 1906; pp. 146-150.
Perspective Illusions in Mediaeval Italian Churches. Illustrated Article. Oct., 1896; pp. 163-183.
Perspective, Linear. Illustrated Article. April, 1896; pp. 378-381.
Philadelphia, A New Influence in the Architecture of. Illustrated Article. Feb., 1904; pp. 93-121.
Philippine, Cuban and Porto Rican Architecture. Illustrated Article. Jan., 1900; pp. 277-314.
Phipps, Residence of Lawrence C. (Pittsburg). Illustrations. Sept., 1903; pp. 168-180.
Phipps Training School, The (Allegheny, Pa.). Illustrated Article. Aug., 1904; pp. 83-114.
Pianos, Colonial. Illustrated Article. Jan., 1900; pp. 268-272.
Piedmont, Monuments of. Illustrated Article. Nov., 1906; pp. 369-383.
Pinchot, Residence of Gifford (Wash., D. C.). Interiors. Illustrations. Aug, 1902; pp. 345-347.
Pipes of Pan, The. Poem. July, 1891; p. 47.
Pisa Cathedral. Illustrated Article. July, 1897; pp. 73-89.
Pisa, The Leaning Tower of. Illustrated Article. Jan., 1898; pp. 257-294.
Pittsburg, The Bank of. Illustrated Article. June, 1898; pp. 49-52.
Pittsburg Improvement, A. (Civic). Notes and Comments. Illustrated. Aug., 1905; pp. 173-174.
Platt, Gardens by Charles A. Illustrated Article. May, 1903; pp. 436-452.
Platt, Work of Charles A. Illustrated Article. March, 1904; pp. 182-244.
Plumbing, Some Common Facts About. Article. July, 1891; pp. 97-108.
Pond and Pond, Colonial Houses by. Illustrated Article. Oct., 1906; pp. 341-346.
Poor, House of Henry W. (N. Y. C.). Interiors. Illustrations. May, 1902; pp. 34-48.

Poor, House of Henry W. (Tuxedo, N. Y.). Illustrations. June, 1902; pp. 156-173.
Pope, Residence of Alfred A. (Farmington, Conn.). Illustrations. Aug., 1906; pp. 122-129.
Pope, Two Houses by John Russell. Illustrated trated Article. Sept., 1904; pp. 204-206.
Porto Rican, Cuban and Philippine Architecture. Illustrated Article. Jan., 1900; pp. 277-314.
Porter, Residence of H. H. (Lawrence, L. I.). Illustrated Article. Sept., 1904; pp. 204-296.
Post, Office of George B. Illustrations. July, 1900; pp. 76-83.
Postoffice, San Francisco. Notes and Comments. Feb., 1906; p. 158.
Post, Work of George B. Illustrated Article. June, 1898; pp. 1-102.
Pottery, Rookwood. Illustrated Article. April, 1905; pp. 294-304.
Price, The Work of Bruce. Illustrated Article. June, 1899; pp. 1-112.
Primrose Hill, London. An English Urban Village. Illustrated. Sept., 1904; pp. 178-185.
Prince George Hotel, The (N. Y. C.). Notes and Comments. Illustrated. Dec., 1905; pp. 476-480.
Prospect, Park, Brooklyn, Marble Shelter in. Notes and Comments. Illustrated. Dec., 1905; pp. 475-476.
Provincial Architecture. Illustrated Article. April, 1900; pp. 405-423.

PUBLIC BUILDINGS.

Albany, N. Y., The Capitol at. Illustrated Article. Oct., 1899; pp. 142-157.
Appellate Court House, The New (N. Y. C.). Illustrations. April, 1900; pp. 430-439.
Capitol, Minnesota State. Illustrated Article. Jan., 1906; pp. 31-36.
Cleveland, Public Buildings in. Illustrated Article. May, 1905; pp. 410-421.
Criminal Court Building, The New (N. Y. C.). Illustrated Article. April, 1894; pp. 429-432.
Indianapolis Court House and Postoffice. Illustrated Article. June, 1906; pp. 437-442.
Minnesota, The New State Capitol of. Illustrated Article. Aug., 1905; pp. 95-113.
Minnesota State Capitol. Illustrated Article. Jan., 1906; pp. 31-36.
Olympia State Capitol (Washington). Illustrations. April, 1902; pp. 11-12.
Postoffice, San Francisco. Notes and Comments. Feb., 1906; p. 158.
State Capitol, How Not to Build a. Notes and Comments. Dec., 1905; pp. 481-482.
White House, The New. Illustrated Article. April, 1903; pp. 358-388.

Puech, The Work of Denys (Sculpture). Illustrated Article. Nov., 1902; pp. 641-648.
Puritan, The Figure of A (Tonetti). Illustration. April, 1905; p. 346.
Pynchon House, The. Illustrated Article. May, 1906; pp. 381-388.

QUAI D'ORSAY STATION (Paris). Illustrated Article. Oct., 1901; pp. 557-580.

RAILWAY EXCHANGE BUILDING, Chicago, The. Notes and Comments. Illustrated. May, 1905; pp. 422-425.
Raymond Lee. A Novel. July, 1891; Oct., 1891; Jan., 1892; April, 1892; July, 1892; Oct., 1892; Jan., 1893; April, 1893; July, 1893; Oct., 1893; Jan., 1894; April, 1894; July, 1894.
Recent Architecture, American and Foreign. Illustrations. Oct., 1897; pp. 165-179.
Record Building, The (Phila.). Illustrated Article. Jan., 1892; pp. 261-264.
Rector Building, The (Chicago). Notes and Comments. Illustrated. Feb., 1905; pp. 156-157.
Refinements in Early Byzantine Churches and French Cathedrals, Architectural. Illustrated Article. Aug., 1904; pp. 116-140.
Refinements in French Cathedrals, Architectural. (No. II.). Illustrated Article. Nov., 1904; pp. 439-463.
Refinements in French Cathedrals, Architectural. (No. III.). Illustrated Article. Dec., 1904; pp. 569-590.
Refinements in Italian Churches, Architectural. Illustrated Article. Oct., 1897; pp. 180-213.
Refinements in Mediaeval Architecture. Illustrated Article. July, 1896; pp. 1-19.
Refinements of St. Marks, Venice, Architectural. Illustrated Article. Nov., 1903; pp. 344-359.
Reinforced Concrete Construction. Illustrated Article. Sept., 1902; pp. 392-412.
Reliance Building. Chicago. Illustrated Article. Jan., 1895; pp. 299-306.
Rembrandt. Illustrated Article. Dec., 1906; pp. 439-463.
Renaissance in France, The Early. Illustrated Article. Oct., 1896; pp. 126-133.
Residence, A Contemporary New York. Illustrated Article. Dec., 1902; pp. 704-722.
Residences by McKim, Mead & White. Franklyn (Elberon, N. J.). Williams (Germantown, Pa.). C. J. Osborn (Mamaroneck, N. Y.). Shepard (Scarborough, N. Y.). Villard (N. Y. C.). Whitelaw Reid (White Plains, N. Y.). J. H. Robb (N. Y. C.). Ross Winan (Baltimore). H. A. C. Taylor (Newport, R. I.). E. D. Morgan (Wheatleigh, L. I.). J. F. Andrew (Boston). J. C. Drayton (N. Y. C.). Metcalf (Buffalo). Illustrated Article. May, 1895.
Residences by Peabody & Stearns. Illustrated Article. July, 1896.
Residences by Bruce Price. Illustrated Article. June, 1899.
Residences by Shepley, Rutan & Coolidge. Illustrated Article. July, 1896; pp. 1-17.
Residences, Modern American. Illustrated Article. Oct., 1904; pp. 296-406.
Residences, Modern (Paris). Illustrated Article. April, 1901; pp. 361-397.
Residences, Recent New York. Illustrated Article. July, 1900; pp. 92-112.
Rhine Valley, Some Notes From. Illustrated Article. April, 1900; pp. 325-332.
Rice House, The (N. Y. City). Illustrated Article. Jan., 1904; pp. 55-91.
Rich Men and Their Houses. Article. May, 1902; pp. 27-32.
Richmond Beach Park. (S. I.). Illustrated Article. March, 1904; pp. 182-244.
Riggs National Bank, The (Wash., D. C.). Notes and Comments. Illustrated. May, 1905; pp. 435-437.
Rimini, The Wonder of (Sigismondo Malatesta). Illustrated Article. Nov., 1905; pp. 355-366.
Robbins, Residence of H. S. (Lake Forest, Ill.). Illustrations. Aug., 1906; pp. 130-136.
Roberts, The House of Mr. Percival, Jr. Illustrations. Nov., 1905; pp. 384-388.
Robertson, The Work of R. H. Illustrated Article. Oct., 1896; pp. 184-200.
Roche, Pierre. Illustrated Article. Jan., 1903; pp. 34-41.
Roche, Portrait Busts by Pierre. Illustrations. Aug., 1904; pp. 165-166.
Rockefeller Building (Cleveland). Illustration. March, 1905; p. 257.
Rockingham, Vermont, The Old Church at. Illustrated Article. Aug., 1903; pp. 94-106.
Rodin. Illustrated Article. Nov., 1905; pp. 327-346.
Rogers, Sculpture of John. Illustrated Article. Nov., 1904; pp. 483-487.
Roman Art. Part I. Illustrated Article. June, 1906; pp. 443-457.
Roman Art. Part II. Illustrated Article. July, 1906; pp. 33-45.
Romanesque Buildings. Illustrated Article. July, 1896; pp. 1-52.
Romanesque Churches. Illustrated Article. July, 1892; pp. 9-29.
Romanesque Revival in America, The. Illustrated Article. Oct., 1891; pp. 151-198.
Romanesque Revival in New York, The. Illustrated Article. July, 1891; pp. 7-38.
Rome, The Villas of (Urban). Illustrated Article. Jan., 1897; pp. 256-288.
Rome, The Villas of. Illustrated Article. July, 1897; pp. 1-32.
Rosenwald House, The. Illustrated Article. July, 1905; pp. 27-32.
Rowe, Residence of W. H. (Pittsburg). Illustrated Article. Aug., 1904; pp. 83-114.

Royal Insurance Building, The (N. Y. C.). Illustrated Article. May, 1906; pp. 361-364.
Royal Polytechnicum at Berlin, The, and Student Life in Germany. Illustrated Article. July, 1895; pp. 65-75.
Ruebens, The House of Harry. Illustrated Article. April, 1904; pp. 361-384.
Russia, Monastic Architecture in. Illustrated Article. July, 1899; pp. 21-49.
Rutan & Russell, The Work of. Illustrated Article. Aug., 1904; pp. 83-114.

S. ANTONIO at Padua, The Basilica of. Illustrated Article. Sept., 1904; pp. 186-201.
S. Ttiénne and S. Front (Perigueux). Churches. Illustrated Article. July, 1898; pp. 49-65.
S. Pierre (Angoulême). Illustrated Article. Oct., 1898; pp. 168-179.
St. Agnes' Chapel, Mosaics in. Illustrations. Jan., 1893; pp. 258-263.
St. Anselm's Church, Mayfair, London. Illustrated Article. Nov., 1903; pp. 360-372.
St. Bartholomew's The New Portals of. Illustrated Article. April, 1904; pp. 293-311.
St. Catherine's Chapel (Spring Lake, N. J.). Illustrated Article. Feb., 1904; pp. 93-121.
St. Francis Xavier, College of. Article. Oct., 1894; pp. 247-249.
St. Jean de Montmartre (Paris). Illustrated Article. Sept., 1902; pp. 375-391.
St. Jean at Poitiers, Church of. Illustrated Article. Oct., 1892; pp. 125-135.
St. John the Divine, Cathedral of. Illustrated Article. July, 1892; pp. 44-53.
St. Louis, Architecture in. Illustrations. April, 1896; pp. 394-410.
St. Louis Exposition, The. Illustrated Article. April, 1904; pp. 336-360.
St. Louis, Municipal Improvement in. Notes and Comments. Jan., 1905; p. 76.
St. Louis, Proposed Civic Centre in. Illustrated Article. May, 1905; pp. 410-421.
St. Louis, Washington University at. Illustrated Article. Nov., 1904; pp. 407-438.
St. Luke's Hospital (New York City). Illustrations. April, 1902; pp. 13-22.
St. Mark's Campanile, Building the New. Illustrated Article. March, 1906; pp. 223-225.
St. Marks, Venice, Architectural Refinements of. Illustrated Article. Nov., 1903; pp. 344-359.
St. Marks, Venice, The Campanile of. Article. Dec., 1902; pp. 723-725.
St. Paul, Minn, New Capitol in. Illustrated Article. Jan., 1901; pp. 280-288.
St. Paul's Chapel at Columbia. Notes and Comments. May, 1905; pp. 427-429.
St. Regis, The Hotel. Illustrated Article. June, 1904; pp. 552-600.
Sachs, The Residence of S. (Elberon, N. J.). Illustrations. Feb., 1903; pp. 180-192.
Saddle and Cycle Club, The (Edgewater, Ill.). Illustrations. Dec., 1905; pp. 487-488.
Sanitation of Dwellings in England. Illustrated Article. April, 1899; pp. 407-422.
San Francisco, The Adornment Association. Notes and Comments. Nov., 1905; p. 400.
San Francisco, Early Business Buildings of. Illustrated Article. July, 1906; pp. 15-32.
San Francisco Postoffice. Notes and Comments. Feb., 1906; p. 158.
San Francisco, The Promised City of. Illustrated Article. June, 1906; pp. 425-436.
San Francisco Residences. Illustrated Article. July, 1906; pp. 46-52.
San Francisco, Street Traffic in. Notes and Comments. April, 1906; pp. 309-311.
San Francisco's Ambition. Notes and Comments. Nov., 1905; pp. 399-400.
San Francisco's Aesthetic Charter. Notes and Comments. Jan., 1906; pp. 69-70.
Santa Maria Maggiore Basilica. Illustrated Article. July, 1892; pp. 65-78.
Saragossa. Illustrated Article. May, 1906; pp. 327-343.
Sargent Decorations in Boston Public Library. Illustrated Article. May, 1904; pp. 423-430.
Schenley, The Hotel (Pittsburg). Illustrated Article. Aug., 1904; pp. 83-114.
Schieffelin Residence (New York City). Illustrations. Jan., 1901; pp. 138-151.
Schiff, The House of Mr. Jacob H. (N. Y. C.). Illustrated Article. July, 1905; pp. 33-39.
Schlesinger & Mayer Building, The (Chicago). Illustrated Article. July, 1904; pp. 53-67.
Schmidt, Two Street Fronts by Richard E. Notes and Comments. April, 1905; pp. 340-342.

SCHOOLS.

School of Architecture, University of Pennsylvania. Illustrated Article. Jan., 1901; pp. 313-336.
School Buildings of New York, The. Illustrated Article. Jan., 1898; pp. 358-384.
School, Phipps Training (Allegheny, Pa.). Illustrated Article. Aug., 1904; pp. 83-114.
School, Widener Memorial Training School for Crippled Children. Illustrated Article. Feb., 1904; pp. 93-121.
Schools, Architectural, in the United States. Columbia University. Illustrated Article. July, 1900; pp. 1-21.
Schools, Free Architectural. Notes and Comments. June, 1906; pp. 475-476.
Schwab, Residence of Charles M. (N. Y. C.). Illustrations. Oct., 1902; pp. 538-547.

SCULPTURE.

Böcklin, Grotesque Sculpture of. Illustrated Article. Feb., 1903; pp. 169-174.
Roche, Pierre. Illustrated Article. Jan., 1903; pp. 34-41.
Roche, Portrait Busts by Pierre. Illustrations. Aug., 1904; pp. 165-166.
Rodin. Illustrated Article. Nov., 1905; pp. 327-346.
Rogers, Sculpture of John. Illustrated Article. Nov., 1904; pp. 483-487.
Roman Art. Part I. Illustrated Article. June, 1906; pp. 443-457.
Roman Art. Part II. Illustrated Article. July, 1906; pp. 33-45.
Sherman, Equestrian Statue of General. Article. Nov., 1902; pp. 657-658.
Sculpture as Applied to Paris Houses. Illustrated Article. Oct., 1896; pp. 134-143.
Sculpture, The Appreciation of. Illustrated Article. March, 1905; pp. 189-200.
Sculpture in the Bay State, Public. Notes and Comments. Feb., 1905; pp. 152-153.
Sculpture in Cities. Notes and Comments. Dec., 1905; p. 480:
Sculpture Committee Meeting, A. Article. Dec., 1902; pp. 759-761.
Sculpture, Contemporary French. Illustrated Article. Oct., 1902; pp. 472-490.
Sculpture, Custom House (N. Y. C.). Notes and Comments. Illustrated. Jan., 1905; p. 71 and pp. 72-75.
Sculpture by Denys Puech. Illustrated Article. Nov., 1902; pp. 641-648.
Sculpture, Grotesque, of Böcklin. Illustrated Article. Feb., 1903; pp. 169-174.
Sculpture, Influence of the Early Renaissance. Illustrated Article. April, 1893; pp. 419-442.
Sculpture of Moreau-Vauthier. Illustrated Article. March, 1903; pp. 221-233.
Sculpture in New Capitol, St. Paul, Minn. Illustrated Article. Jan., 1901; pp. 280-288.
Sculpture, Its Relation to Architecture. Illustrated Article. July, 1903; pp. 28-49.
Sculpture, On the Relation of, to Architecture. Part I. Illustrated Article. June, 1903; pp. 493-507.
Sculpture of Van der Straeten. Illustrated Article. Feb., 1903; pp. 134-143.
Sculpture in Wax, French. Illustrated Article. Sept., 1902; pp. 421-429.
Sculptured Tombs of Hellas. Illustrated Article. April, 1897; pp. 557-567.
Sears, Roebuck Building, The. Notes and Comments. Illustrated. Aug., 1905; pp. 167-169.
Seligman, Residence of Henry (N. Y. C.). Illustrated Article. Dec., 1902; pp. 704-722.
Shaw, Some Houses by Mr. Howard. Illustrated Article. Feb., 1906; pp. 104-122.
Shepard, Residence of Mrs. Elliott F. (Scarborough, N. Y.). Illustrations. Oct., 1902; pp. 550-568.

Shepley, Rutan and Coolidge, The Work of. Illustrated Article. July, 1906; pp. 1-52.
Sherman, Equestrian Statue of General. Article. Nov., 1902; pp. 657-658.
Shop of the Havana Tobacco Co. Illustrated Article. Jan., 1905; pp. 42-49.
Shops in Chicago. Illustrated Article. July, 1906; pp. 71-74.
Sicily, Churches and Temples of. Illustrated Article. Jan., 1897; pp. 289-309.
Sienna Chamber of Commerce (Italy). Notes and Comments. Illustrated. Oct., 1905; pp. 305-307 and 308.
Signs in New York, Street. Notes and Comments. Feb., 1905; p. 152.
Singer Building, The. Illustration. April, 1906; p. 310.
Singer Building, The (561-563 Broadway, N. Y. C.). Illustrated Article. March, 1904; pp. 274-284.
Skeleton Construction. Illustrated Article. Oct., 1891; pp. 228-235.
Skyscraper, Evolution of a (N. Y. Times Building). Illustrated Article. Nov., 1903; pp. 329-343.
Skyscraper, A Picturesque. The Wolfe Building, (N. Y. C.). Illustrated Article. Jan., 1896; pp. 299-302.
Skyscraper, A Rational. Illustrated Article. March, 1904; pp. 274-284.
Skyscraper, The Up-to-Date. Illustrated Article. Jan., 1899; pp. 231-260.
Skyscrapers—Do They Pay? Article. May, 1902; pp. 109-111.
Skyscrapers, Entrances to. Illustrations. April, 1900; pp. 363-374.
Skyscrapers, The Newest Thing in. Notes and Comments. May, 1906; pp. 398-400.
Slater, Residence of Mrs. E. H. G. (Wash., D. C.). Illustrated Article. Feb., 1904; pp. 93-121.
Socialism and the Architect. Article. April, 1905; pp. 329-335.
Soldiers' Monument (New Britain, Conn.). Illustration. April, 1902; p. 53.
Sorrow Chord, The. Poem. July, 1891; p. 61.
South Kensington Museum, Architecture at the. Illustrated Article. April, 1899; pp. 389-406.
Spain, Architecture in. Illustrated Article. July, 1894; pp. 14-35.
Spain, Architecture in. Illustrated Article. July, 1895; pp. 46-64.
Spain, Architecture in. Illustrated Article. Jan., 1896; pp. 227-243.
Spanish-Mexican Missions of the U. S. Illustrated Article. Sept., 1903; pp. 181-204.
Spencer, Houses by Mr. Robert C., Jr. No. 6448 Minerva Ave., Chicago. House of Mr. Robert Spencer, Milwaukee. Residence of Mr. U. F. Orendorff, Canton, Ill. Illustrated Article. July, 1905; pp. 40-50.
Sperling & Linden Building, The (Chicago). Notes and Comments. Illustrated. Dec., 1905; p. 482.
Speyer Building, The (N. Y. C.). Illustrated Article. July, 1903; pp. 13-27.
Spier's Architecture East and West. Notes and Comments. Sept., 1905; p. 233.
Spire, The Passing of the. Notes and Comments. Jan., 1906; p. 68.
Sprague, The Estate of Mrs. C. L. (Brookline, Mass.). Illustrated Article. March, 1904; pp. 182-244.
Springfield, Mass., Civic Improvement at. Article. Nov., 1902; pp. 649-654.
Stadia. Article. Jan., 1902; pp. 114-116.
Stage Settings for "Romeo and Juliet." Illustrated Article. Sept., 1905; pp. 175-191.
Stained Glass in France, Domestic. Illustrated Article. Oct., 1899; pp. 115-141.
Stained Glass in Private Houses. Illustrated Article. Nov., 1905; pp. 347-354.
Stained Glass Windows. Illustrated Article. April, 1893; pp. 473-492.
Stained Glass Windows, A Difficulty in Designing. Article. Jan., 1902; pp. 110-112.
Stained Glass Windows, French. Illustrated Article. Jan., 1893; pp. 264-285.
State Capitol, How Not to Build a. Notes and Comments. Dec., 1905; pp. 481-482.
Station, Quai D'Orsay (Paris). Illustrated Article. Oct., 1901; pp. 557-580.
Stewardson, The Work of Cope and. Illustrated Article. Nov., 1904; pp. 407-438.
Stock Exchange, Façade of the New York. Illustrated Article. Nov., 1904; pp. 464-482.
Stock Exchange, The New (N. Y. C.). Illustrated Article. Sept., 1902; pp. 413-420.
Stock Exchange, The New York. Illustrated Article. July, 1901; pp. 525-555.
Stone in American Architecture. Illustrated Article. Oct., 1899; pp. 174-202.
Stone, The Return to. Illustrated Article. (Tech. Dept.) Oct., 1899; pp. 203-209.
Stow, The House of Mr. W. L. (Roslyn, L. I.). Illustrated Article. April, 1905; pp. 271-293.
Street Architecture, The Value of the Curve in. Illustrated Article. March, 1905; pp. 231-236.
Street System of New York, The Problem of the. Article. Feb., 1903; pp. 175-179.
Studebaker Building (Kansas City). Notes and Comments. Illustrated. Oct., 1905; pp. 311-313.
Student Life in Germany and The Royal Polytechnicum at Berlin. Illustrated Article. July, 1895; pp. 65-75.
Studio Building, A Co-operative (25 West 67th St., N. Y. C.). Illustrated Article. Oct., 1903; pp. 238-254.
Sturgis. A Review of Mr. Russell Sturgis' Last Book. March, 1906; pp. 199-205.
Styles, The Battle of the. Illustrated Article. Jan., 1892; pp. 265-275.
Styles, Battle of the. Article. April, 1892; pp. 405-413.
Styles, Choice in Architectural. Article. April, 1892; pp. 391-400.
Sub-Treasury (N. Y. C.). Illustrated Article. July, 1899; pp. 57-64.
Suburban Architecture, Recent in Philadelphia and Vicinity. Illustrated Article. March, 1906; pp. 166-193.
Suburban House, Construction of English. Illustrated Article. Oct., 1896; pp. 114-125.
Suburban House in England, The Decoration of the. (Interiors). Illustrated Article. Oct., 1901; pp. 641-665.
Suburban House, Design of English. Illustrated Article. April, 1896; pp. 321-346.
Suburban Residence, The Contemporary. Illustrated Article. Jan., 1902; pp. 69-81.
Sullivan, Ornament by Louis H. Illustrations. April, 1900; pp. 442-449.
Sullivan's Place at Ocean Springs, Miss., Louis H. Illustrated Article. June, 1905; pp. 471-490.
Somerset, The Hotel. Illustrated Article. March, 1903; pp. 292-297.
Sunset of the Ages. Poem. Jan., 1892; p. 345.
Swiss Chalets. Illustrated Article. April, 1897, pp. 415-428.
Swiss Chalets. Illustrated Article. July, 1897; pp. 23-61.
Synagogue, The Story of the. Illustrated Article. Dec., 1906; pp. 464-480.

TENEMENTS, Model. Illustrations. April, 1902; pp. 38-40.
Tennis and Racquet Club (Boston). Illustration. Feb., 1906; p. 162.
Teutonic Knights, A Haunt of. Illustrated Article. July, 1899; pp. 1-20.
Terra Cotta, The Advantages of (No. 2). Tech. Art. Illustrated. Oct., 1905; pp. 315-323.
Terra Cotta, Glazed and Colored. Illustrated Article (Tech. Dept.). April, 1906; pp. 313-323.
Terra Cotta in New York City, The History of. Illustrated Article. Oct., 1892; pp. 136-148.
Terra Cotta, The Proper Use of. Illustrated Article (Tech. Dept.). Jan., 1906; pp. 73-81.
Terra Cotta, Some of its Characteristics. Illustrated Article. July, 1891; pp. 63-68.
Terra Cotta, The Use of (No. 1). Tech. Art. Illustrated. July, 1905; pp. 86-94.
THEATRES.
Theatre, Lyceum, The New. Illustrated Article. Jan., 1904; pp. 55-91.
Theatre, New Amsterdam. Illustrated Article. Jan., 1904; pp. 55-91.
Theatre, The Perfect. Illustrated Article. Feb., 1905; pp. 101-117.
Theatre at Zürich. Illustrations. Oct., 1893; pp. 165-168.

Theatre of N. Y. C., The New (Lyric, Majestic, Hudson, Empire). Illustrated Article. Jan., 1904; pp. 39-54.

Thebaud, House of Paul Gilbert (White Plains, N. Y.). Illustrated Article. July, 1904; pp. 1-12.
Thebaud, The House of Louis A. Notes and Comments. Illustrated. Feb., 1905; pp. 157-162.
Thiers Institute (Paris). Illustrated Article. March, 1903; pp. 248-258.
Thomas Asylum for Orphan and Destitute Indian Children (Iroquois, N. Y.). Illustrated Article. Sept., 1904; pp. 204-296.
Thomas Music Hall, The New (Chicago). Illustrated Article. Aug., 1904; pp. 160-164.
Thorne, House of Charles (Winnetka, Ill.). Illustrated Article. April, 1904; pp. 361-384.
Thornton, The Work of William. Illustrated Article. July, 1896; pp. 52-70.
Thrones and Pulpits, Episcopal. Illustrated Article. July, 1901; pp. 441-463.
Tiffany and Gorham Buildings. Sept., 1906; pp. 214-221.
Tiffany, House of Louis C. (N. Y. C.). Illustrations. Oct., 1900; pp. 191-202.
Tilden, Tomb of the Late Samuel J. (New Lebanon, N. Y.). Illustrations. April, 1902; pp. 31-33.
Tiles, Persian. Illustrated Article. Aug., 1906; pp. 146-150.
Timber Churches in Norway. Illustrated Article. Aug., 1906; pp. 93-102.
Timber Houses. Illustrated Article. July, 1892; pp. 9-29.
Times Building, The New York. Illustrations. Aug., 1903; pp. 152-153.
Tombs of Hellas, Sculptured. Illustrated Article. April, 1897; pp. 557-567.
Tombs, Medicean. Illustrated Article. March, 1903; pp. 207-220.
Tower Building, The Passing of the. Notes and Comments. Oct., 1905; p. 313.
Townsend, Residence of Mrs. R. H. (Wash., D. C.). Illustrated Article. April, 1901; pp. 425-447.
Transit Building, The (N. Y. C.). Illustration. Jan., 1903; p. 74.
Troja, Cathedral of. Illustrated Article. Jan., 1899; pp. 279-296.
Trolley Poles, Ornamental. Notes and Comments. Illustrated. May, 1905; p. 432.
Trumbauer, The Works of Horace. Illustrated Article. Feb., 1904; pp. 93-121.
Tuscaloosa, Ala., Greek Revival Houses in. Illustrated Article. May, 1905; pp. 388-399.
Twyman, The Work of Joseph (Furniture). Illustrated Article. Dec., 1905; pp. 453-459.

UNDERHILL, Bungalow of Mr. Frank (Montecito, Cal.). Illustrated Article. Oct., 1906; pp. 296-305.
Underhill, Bungalow of Mr. Frank (Montecito, Cal.). Illustrated Article. Oct., 1906; pp. 296-305.
Union League Club (N. Y. C.). Illustrated Article. July, 1906; pp. 68-70.
United States Naval Academy. Drawings. Illustrations. Jan., 1901; pp. 164-169.

UNIVERSITIES.

Columbia University, Architectural Schools in the U. S. Illustrated Article. July, 1900; pp. 1-21.
Columbia University, Horizontal Curves in. Illustrated Article. July, 1899; pp. 82-93.
Columbia University Library. Sept., 1906; pp. 178-179.
Universities and the Fine Arts. Article. Nov., 1902; pp. 655-656.
Universities and the Fine Arts, The. Article. April, 1903; pp. 389-394.
University of Chicago. Illustrated Article. Oct., 1894; pp. 229-246.
University of Chicago. Illustrated Article. Feb., 1896; pp. 83-90.
University, Leland Stanford. Illustrated Article. July, 1896; pp. 48-52.
University, New York. Sept., 1906; pp. 182-184.
University of Pennsylvania. Illustrated Article. Nov., 1904; pp. 407-438.
University of Pennsylvania, The School of Architecture at the. Illustrated Article. Jan., 1901; pp. 313-336.
University, Washington, at St. Louis. Illustrated Article. Nov., 1904; pp. 407-438.
University Club. Sept., 1906; pp. 192-194.
University Club. Illustrations. Jan., 1901; pp. 112-123.

Uptegrove & Brother, Warehouse of Wm. E. (N. Y. C.). Illustrations. July, 1904; pp. 79-82.
U. S. Leather Co.'s Building (N. Y. C.). Notes and Comments. Illustrated. Nov., 1905; pp. 389-391.

VANDERBILT, The Estate of W. K. (Oakdale, L. I.). Illustrated Article. May, 1903; pp. 451-492.
Vanderbilt, Residence of Cornelius (N. Y. C.). Illustrated Article. June, 1898; pp. 59-82.
Van der Straeten, Work of (Sculpture). Illustrated Article. Feb., 1903; pp. 134-143.
Van Ingen, Mural Painter, William B. Illustrated Article. April, 1903; pp. 322-334.
Vault Construction, Modern. Illustrated Article. April, 1897; pp. 446-449.
Vaux-Le-Vicomte, The Château de. Illustrated Article. Dec., 1905; pp. 407-433.
Venice, An American (Los Angeles, Cal.). Illustrated Article. Oct., 1906; pp. 347-351.
Venice, Restoration in. Notes and Comments. April, 1906; pp. 311-312.
Villas of Rome, The. Illustrated Article. July, 1897; pp. 1-32.
Villas of Rome, The (Urban). Illustrated Article. Jan., 1897; pp. 256-288.

WALTON, The Hotel. Illustration. April, 1906; p. 308.
Wanamaker Building, The. Illustration. Nov, 1905; p. 394.
Wanamaker Building, The New (Philadelphia). Notes and Comments. Illustrated. March, 1906; pp. 226 and 229.
Ware, The Work of Professor. Article. Jan., 1903; pp. 91-94.
Warehouse and the Factory in Architecture, The. (No. 1). Illustrated Article. Jan., 1904; pp. 1-17.
Warehouse and the Factory in Architecture, The. (No. 2). Illustrated Article. Feb., 1904; pp. 122-133.
Washington, D. C. Illustrated Article. May, 1902; pp. 1-26.
Washington, D. C., The Improvement of. Article. Sept., 1902; pp. 456-458.
Washington Terminal, The. Illustrated Article. Dec., 1905; pp. 434-446.
Washington University at St. Louis. Illustrated Article. Nov., 1904; pp. 407-438.
Watchman, What of the Night? Poem. Oct., 1892; p. 184.
Waterman, The House of Mrs. (Parkersburg, W. Va.). Illustrated Article. Oct., 1906; pp. 323-334.
Wauters, Emile, as a Painter of Architecture. Illustrated Article. Oct., 1900; pp. 201-211.
Wauters, Residence of Mr. Emile. Illustrated Article. April, 1897; pp. 439-445.
Wells Building, The (Milwaukee). Illustration. Feb., 1905; p. 151.
Wells, Residence of W. Storrs (Newport, R. I.). Illustrated Article. Feb., 1904; pp. 93-121.
West 79th Street, New York, Nos. 132 and 132a. Illustrated Article. Jan., 1903; pp. 49-54.
West Point, The Architecture of. Illustrated Article. Dec., 1903; pp. 462-492.
Western Residences, A Group of. McKinlock House (Lake Forest, Ill.). Hamlin House (Chicago). McMullen Residence (Ravinia, Ill.). Dwight H. Perkin's Residence (Evanston, Ill.). Illustrated Article. July, 1905; pp. 66-73.
Westminster, The New Cathedral at. Illustrated Article. Aug., 1902; pp. 316-337.
Wetmore, Residence of Charles W (Oyster Bay, L. I.). Illustrated Article. March, 1903; pp. 279-291.

Where the Ships Come in. Poem. July, 1892; p. 54.
Whistler, The Art of. Article. May, 1904; pp. 467-481.
Whitehall Building, The (N. Y. C.). Illustrated Article. July, 1903; pp. 70-73.
White House, The New. Illustrated Article. April, 1903; pp. 358-388.
Whitney, Residence of William C. (N. Y. C.). (Interiors.) Illustrations. April, 1901; pp. 407-416.
Whitney, The Residence of the Late Wm. C. (Wheatleigh Hills, L. I.). Illustrated Article. Oct., 1904; pp. 340-343.
Whittemore Building, The. Notes and Comments. Oct., 1905; pp. 307 and 309.
Whittemore Building, The (Chicago). Notes and Comments. Illustrated. June, 1905; pp. 516-517.
Widener Memorial Training School for Crippled Children. Illustrated Article. Feb., 1904; pp. 93-121.
Widener, Residence of P. A. B. (Philadelphia). Illustrated Article. Feb., 1904; pp. 93-121.
Willard Hotel, The New (Wash., D. C.). Illustrated Article. March, 1905; pp. 167-188.
Williams Building, The (N. Y. C.). Notes and Comments. Feb., 1906; pp. 151, 153, 154.
Williamsburg Trust Co.'s Building. Illustration. June, 1906; p. 466.
Windows in England and America, Decorative. Article. April, 1897; pp. 509-516.
Windsor Hotel, Addition to the (Montreal, P. Q.). Illustration. May, 1906; p. 394.
Wire Glass and Metal Work, Ornamental. Illustrated Article. Aug., 1906; pp. 137-145.
Wolfe Building (N. Y. C.). Illustrated Article. Jan., 1896; pp. 299-302.
Wolff, Residence of L., Jr. (Chicago). Illustrated Article. April, 1904; pp. 361-384.
Wood, Donn & Deming, The Work of. Illustrated Article. April, 1906; pp. 244-258.
Wooden Houses in France During the Middle Ages. Illustrated Article. April, 1900; pp. 333-362.
World's Fair and the Government (Chicago). Illustrated Article. Jan., 1893; pp. 333-336.
World's Fair (Chicago). Article. Jan., 1894; pp. 291-301.
World's Fair, Chicago, State Buildings at. Illustrated Article. July, 1893; pp. 55-71.
World's Fair, Chicago, Women's Building. Illustrations. April, 1892.
Wright, Work of Frank Lloyd, Its Influence. Illustrated Article. July, 1905; pp. 60-65.

YACHT CLUB (N. Y. C.). Illustrations. April, 1901; pp. 417-424.

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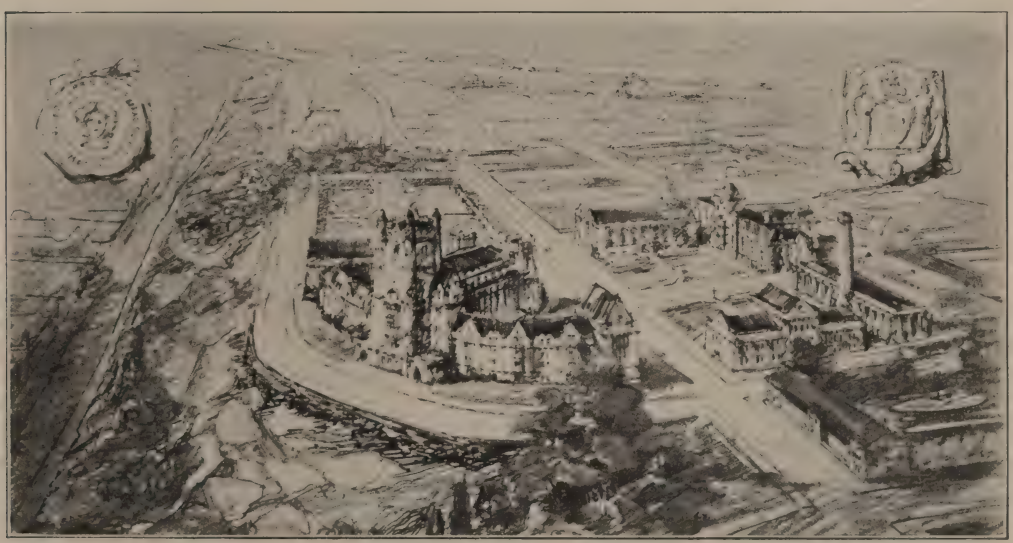
THE COLOR SKETCH FOR THE WINDOW AND TABLET TO BE ERECTED IN CANTON, OHIO, IN MEMORY OF THE LATE PRESIDENT McKINLEY

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The College of the City of New York.

Much better did those municipal statesmen build than they knew who founded the Free Academy, a lifetime ago, to be the crown and culmination of the system of the public schools, and called a professor down from the Hinterland of Seneca Lake and Geneva College to preside over the same. There have not been wanting critics to say, and keep on saying, that it was anomalous and indefensible for the State to give a higher education to the favored few than it was bound in self-preservation to give to the undistinguished many. But these objections if, indeed, since the death of Charles A. Dana, they continue to be urged at all, are now on all hands recognized as theoretical and academic, not to be pleaded in the face of the enormous beneficence of the academy, long ago become the College of the City of New York, and long ago, like wisdom, justified of its children. The new buildings, massive and costly as they are, and set on a hill, although, unhappily, they can be "hid" from what ought to be the most impressive point of view, stand as a monument of the public usefulness of the institution through-



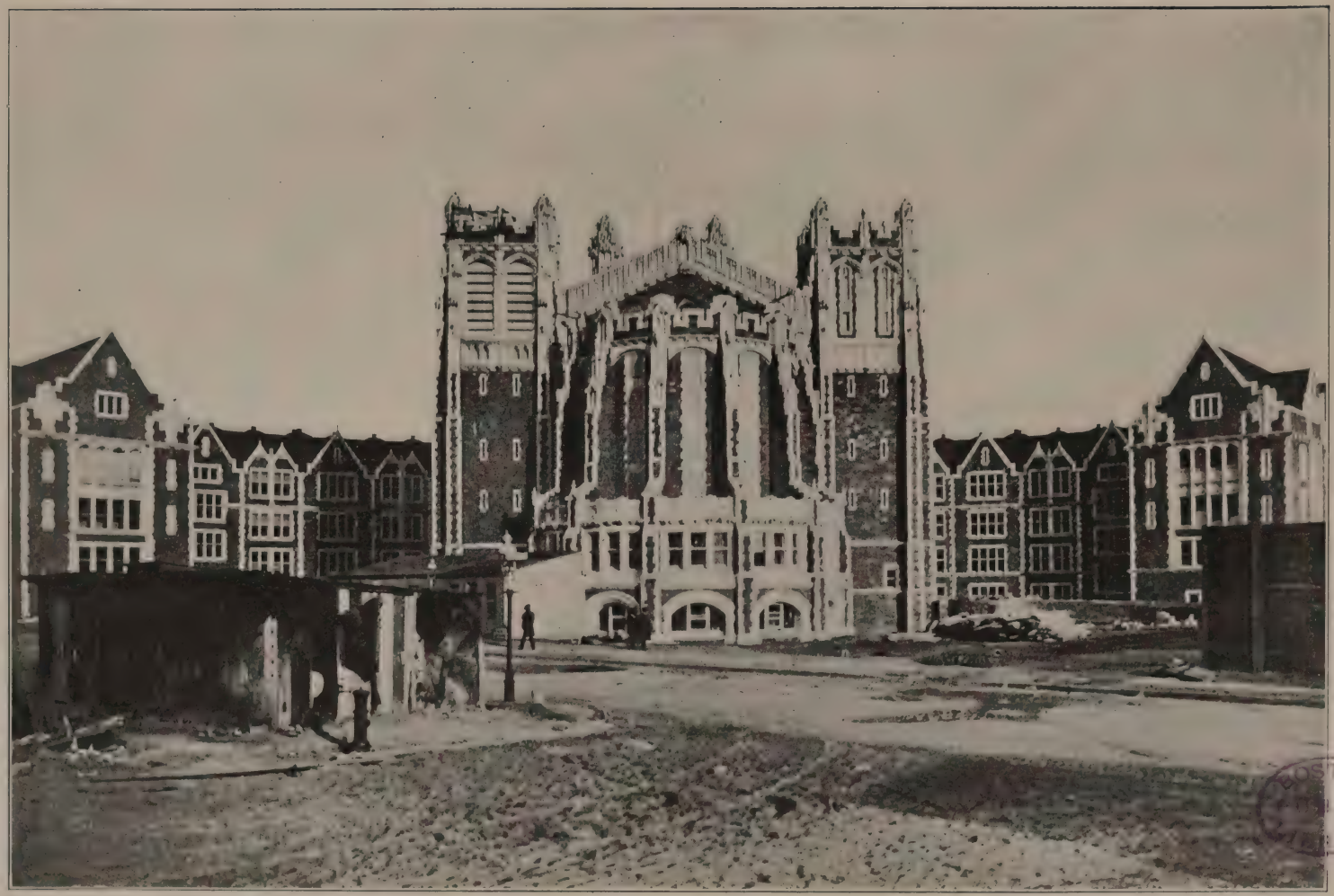
C. C. N. Y.—BIRD'S EYE VIEW FROM THE NORTHEAST.
(From the Architect's Drawing.)
Washington Heights, New York City. George B. Post, Architect.

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C. C. N. Y.—GENERAL VIEW OF EASTERN FRONT FROM EDGECOMBE AVENUE.

Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.



C. C. N. Y.—REAR OF ASSEMBLY HALL AND WINGS.

Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

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out these generations and of the public appreciation of that usefulness.

They stand in a rather affecting contrast to the old building in Twenty-third street, which remains as a reminder of the day of small things, of century; for its architect was James Renwick, one of whose favorite sayings it was that the business of an American architect was to build things that would stand and be presentable for about thirty years, after which they



C. C. N. Y.—THE NORTHERN WING OF THE COLLEGE BUILDING FROM THE EAST.
Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

what has become a great institution. Not that that was a bad thing in its day, its day being, one supposes without looking it up, the late forties or the early fifties. It has already survived, one may say, the expectations of its architect by attaining its full half were fairly sure to yield to "the principle of vicissitude and the effluxion of things." The belief seems to be well founded, though among the author's own works Grace and Calvary, to say nothing of St. Patrick's Cathedral, survive to contradict it. Evidently it is not

adapted to promote "a sad sincerity" in design or a too conscientious thoroughness in workmanship. But the old and single building of the College of the City of New York, though so long ago outgrown, was an effective

bly room" was placed at the top of the building in a clerestory was as effective architecturally as it was eligible practically. But the single building was long ago outgrown, and the efforts made to secure the necessary accom-



C. C. N. Y.—TOWNSEND HARRIS HALL, THE SUBFRESHMAN BUILDING.
Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

design, needing only a more affectionate care in the elaboration of the detail and a choice of more durable and more genuine material to produce a rather distinguished success. The disposition by which the "general assem-

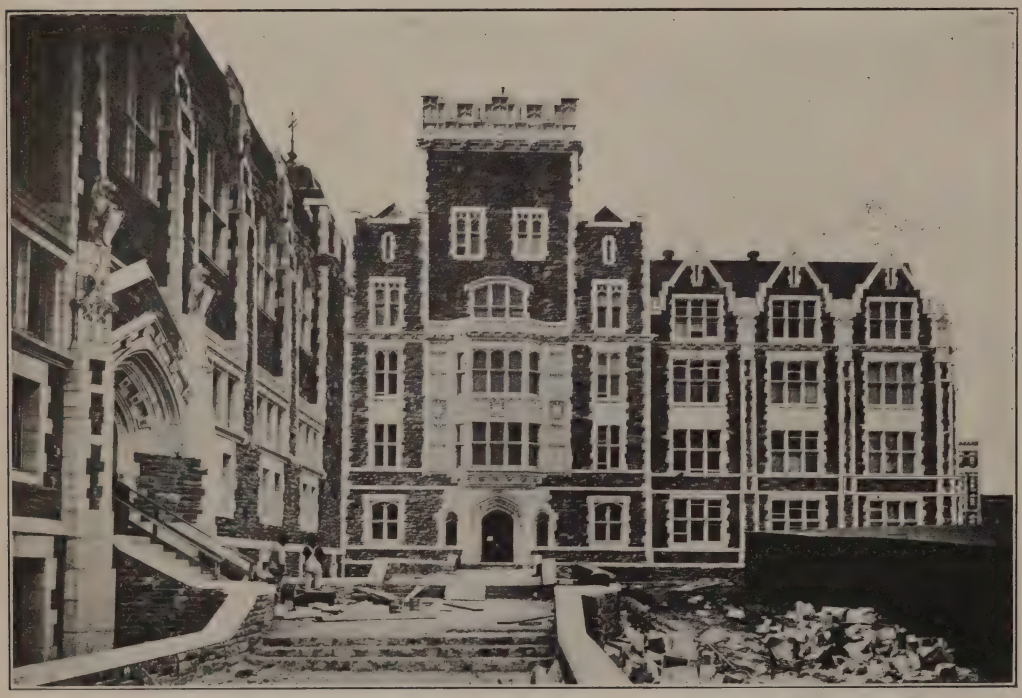
modations near by were not only makeshifts, but, by reason of the advance in the value of land, very costly makeshifts. The necessity for a new housing of the college was manifest ten years before practical steps were taken

in that direction and urgent for at least five years before.

The new ground was very happily chosen. The ridge that skirts the Hudson from the upper end of Central Park to and beyond the Spuyten Duyvil, which is the northern boundary of Manhattan, offers the best sites on the island for noble buildings meant to be seen from afar. It is especially adapted by nature for establishments which by their character require some aloofness, some detachment, some cloistrality, which ought to be kept "far from the madding crowd's ignoble strife." The authorities of the Protestant Episcopal Church were first to see and seize the advantage of the ridge by pre-empting the lower end of it for the Cathedral of St. John the Divine. Nay, a score of years before and more, the Park Department had recognized and emphasized the advantages of the uplift by the provident reservation and the appropriate treatment of "Morningside." That, by the way, must have been one of the happy hits in nomenclature of the late Fred. Law Olmsted. For "institutions" the recognition had been earlier still, especially on behalf of the Roman Catholic Church, always prudent and provident in these matters, as witness the "Convent" from which the bordering avenue of the new college buildings takes its name. Since the foundation of the cathedral it has been recognized in turn by Columbia, and by the New York University, since the site of this latter is on a ridge which is virtually a prolongation beyond the Harlem and into Bronx Borough, of the heights that begin at Morningside. But along its whole extent the heights scarcely offer, at least on the landward side, so fair a chance for a "seat of learning" as this which has now been occupied. Doubtless the view from the eastward, which should be the chief view, would be far more impressive if at the foot of the cliff

Whose ridgy back heaves to the sky

there were a body of water instead of

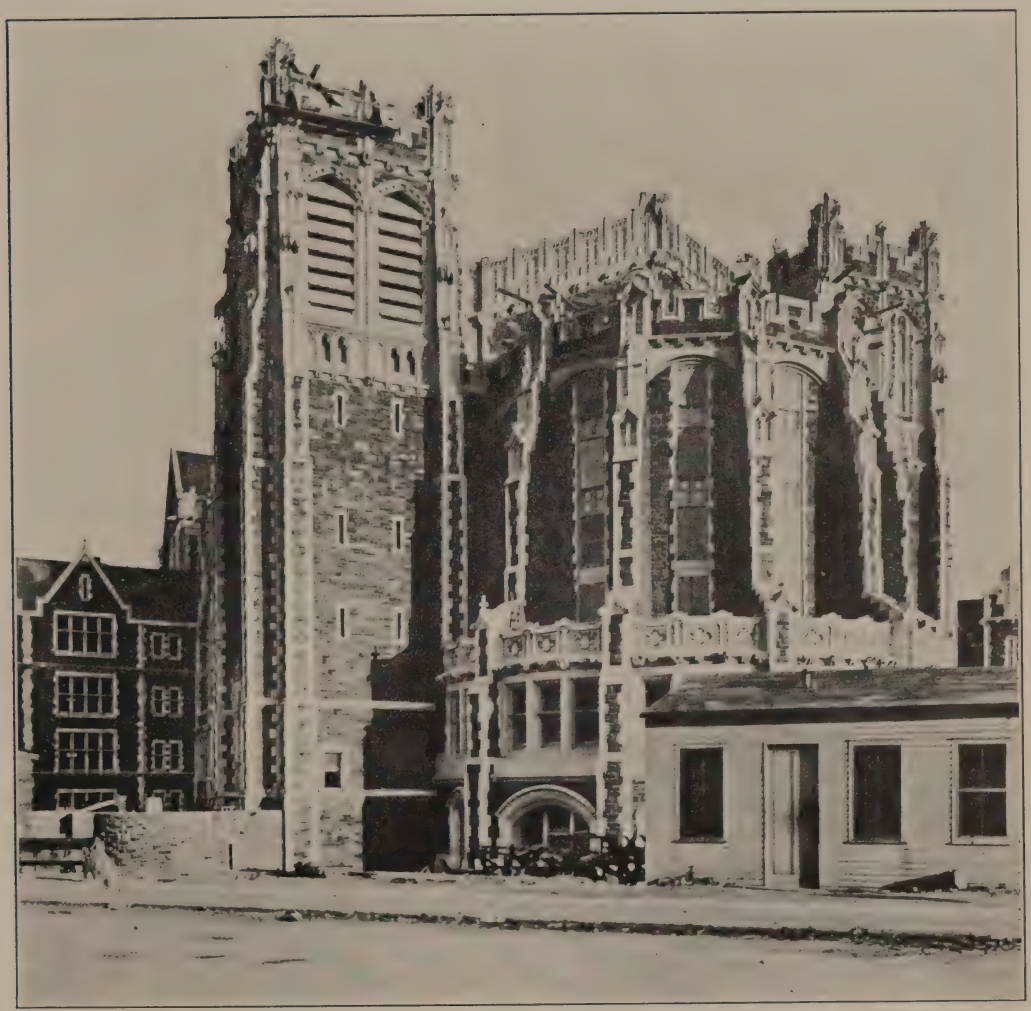


C. C. N. Y.—QUADRANGLE FRONT OF SUBFRESHMAN BUILDING, GYMNASIUM TO THE LEFT.

Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

a builded and peopled plain. Hence the main front of the college does not get the value to which it is entitled, being fairly visible only from the street underneath and so close that from it the architecture is violently foreshortened.

has now been carried into execution fairly "imposed itself" not alone upon the judges but upon the architectural profession. Other designs had their qualities, one at least in a high degree the mild monastic and cloistral quality which is traditionally



C. C. N. Y.—THE NORTH TRANSEPT TOWER AND APSE OF THE ASSEMBLY HALL.
Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

Nor will it be seriously disputed that the rare opportunity offered by the site has been taken advantage of in the architecture. The beginning of it was a competition, a competition in which the competitors were fairly chosen on the "public form" of previous performance. And the design which

recognized as appropriately "collegiate." The winning design had that also. But along with that it had a vigor and boldness of picturesqueness especially appropriate to the site and the material, the material being the rugged intractable rock of which the hill is built, and of which the intracta-

bility is shown in the massive boulders that tumble down the hill. It is recognized also in the choice of a quite different material for all the hewn and elaborated work. In sooth, the choice of this latter material is the one point

sweep of the principal front of the college proper imposes itself and seems, now that the building is done, quite inevitable and obvious, although, as a matter of fact, it did not suggest itself to any other than the successful com-

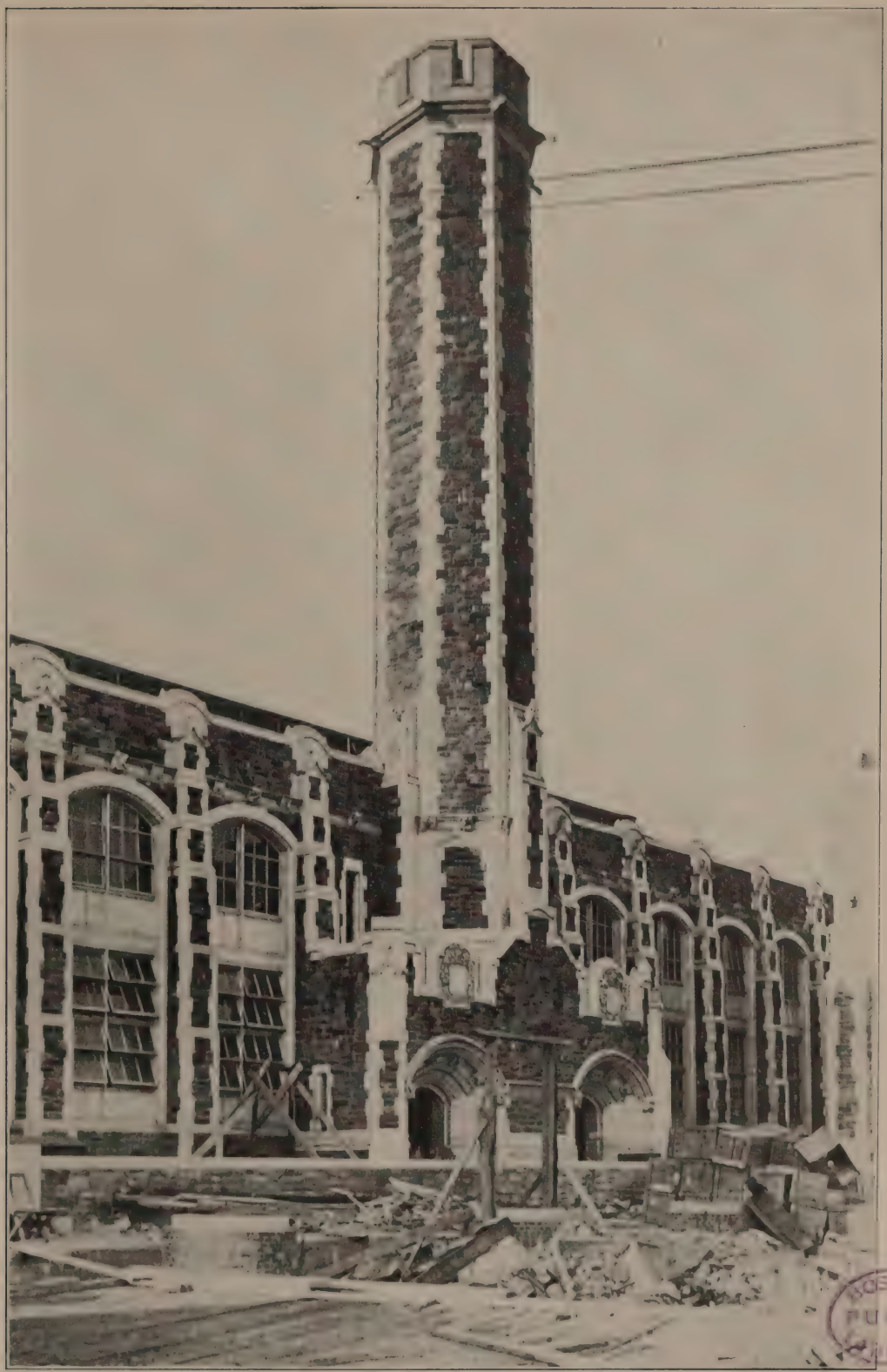


C. C. N. Y.—ONE OF THE EDGECOMBE AVENUE ENTRANCES TO THE COLLEGE BUILDING. Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

of the design that is not only questionable but that everybody questions.

But before going into that, it may be as well to put another query which the completed work almost as imperatively suggests. The large segmental

petitor. It is a new instance of that talent for simplification, for discerning the essential point and giving emphasis to it in the "lay out"—which in English ears is more expressive than "parti"—in which one would say that Mr. Post's



C. C. N. Y.—MECHANICAL ARTS BUILDING FROM THE QUADRANGLE.
Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

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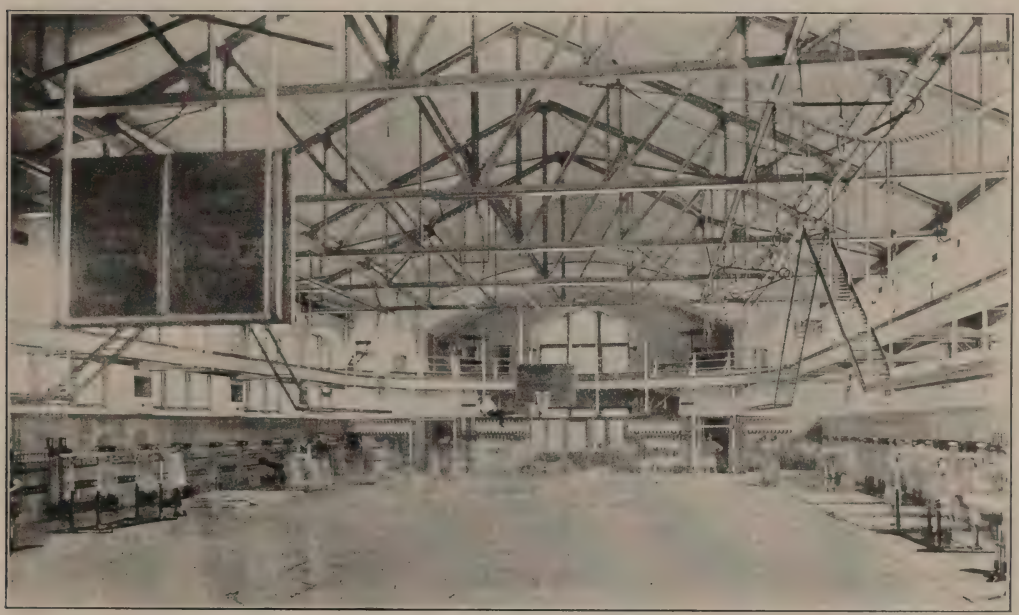
architectural talent most of all resides. But of this circular front and its central tower it was remarked by one of the competitors at the time of the competition that "you won't be able to see it anywhere," and that is much truer than one could wish. As a matter of fact, you can see it altogether and see it all at once only from the roofs of the houses opposite on the east, which is the point of view from which our general illustration of this front is taken. From the ground level it is only the upper stories of the buildings and the upper stages of the tower that can be seen. And this because the convex front is withdrawn, "refused" as it would be called in military language, by the interposition between itself and the top of the cliff of a broad avenue with broad sidewalks and a generous breadth of grassplot also. There is obviously no occasion in the practical conditions of traffic at this point for a wide street; in fact, for any street in front of the college. This expanse is reserved for the purpose of furnishing a suitable foreground for the architecture. It does not, in fact, furnish such a foreground, for from this esplanade the architecture cannot be seen to advantage, cannot be seen altogether or taken in all at once. One would have to back off several hundred feet further than the platform allows to get an "eye-stroke" of the whole swinging front, whereas such a retirement would take him to the foot of the hill where quite the lower half of the buildings would be invisible to him. Perhaps it was not practicable, though the impracticability is certainly not obvious, but how very effective it would have been architecturally, and for that matter, what an increase of available area would have been secured if the crescent had been



C. C. N. Y.—THE SWIMMING TANK.
Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

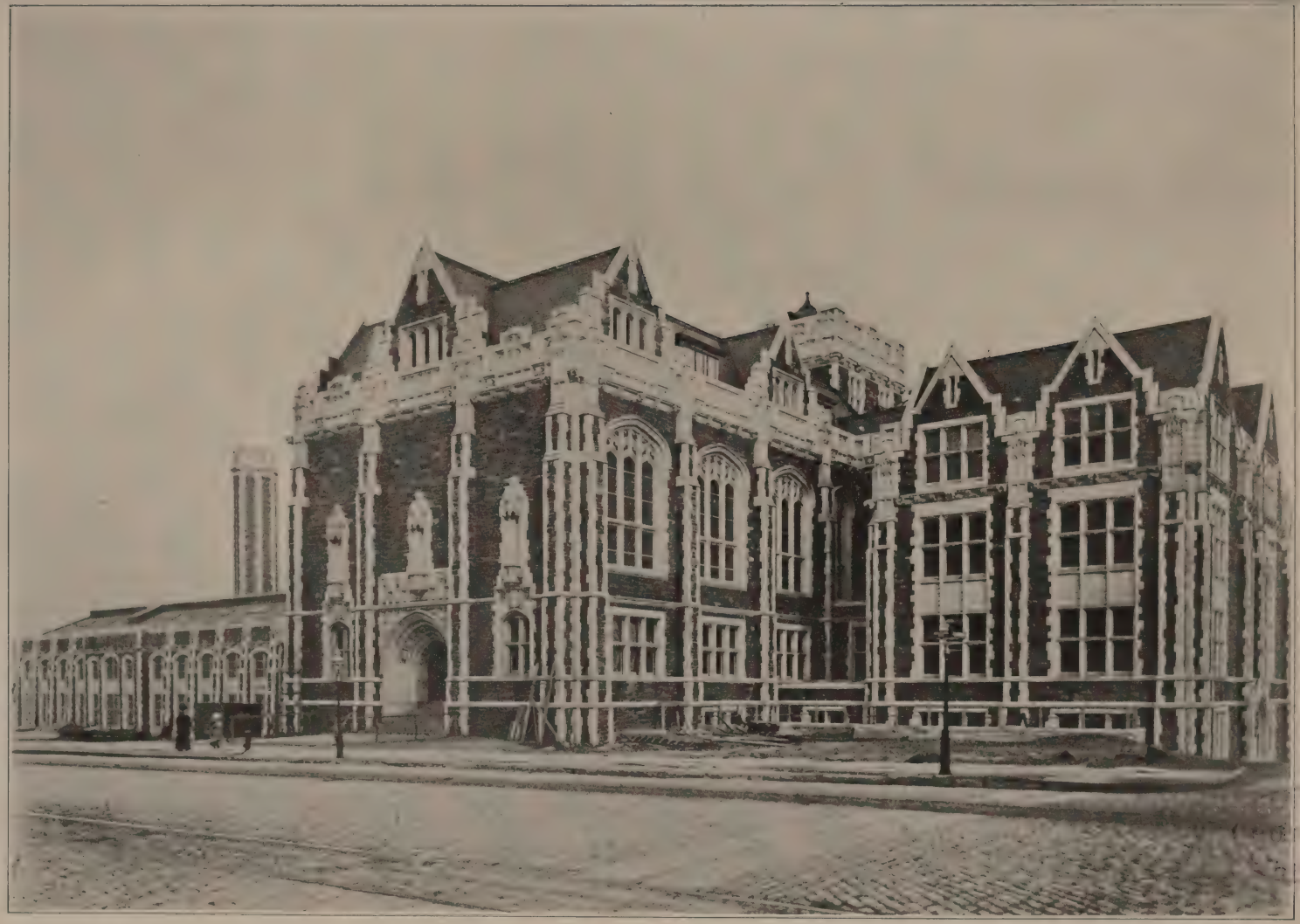
brought forward to the edge of the cliff, or so near the edge as only to admit between a covered sidewalk of one story and, say, of as great a projection as those porches at the sides of the great central tower which contain the entrances. Such a covered sidewalk, in the form, say, of an open arcade, would have formed a picturesque feature the cloistral character of which would admirably have suited the purpose and the architecture. What is even more important, it would have brought the front forward to a position in which it would actually have "beetled" and would have seemed to grow out of the crag on which it stood, while it would have given from below that full and free view of the front which can now be had nowhere excepting from a roof. Every memory will recall examples of such a disposition, from Mont St. Michel to Limburg on the Lahn, and will recall them by their invariable architectural effectiveness. It seems a pity that such an opportunity should have been foregone in favor of a more commonplace and conventional disposition.

The other general criticism is that which everybody makes, and on which, therefore, there is no occasion to insist. That is, that the contrast between the rugged black stone of the walls and the snow white terra cotta of the wrought work is violent and disturbing. Besides its violence it entails other unfortunate results. In opposition to the contention that depth of color ought to emphasize stress of structure, and that, consequently, the "trimmings" of a building should be darker, where two materials were employed, than the intervals of wall, Richardson used to maintain, in his usual impatience with anything in the way of a dogmatic restriction, that the lighter material might be employed to frame the darker, only in that case, it should be increased in quantity, that, as he vehemently put it, a building of polished black granite, subject to that condition, might become artistic with trimmings of white marble. In the case of Austin Hall, at Cambridge, he strove to exemplify his theory of the excess in quantity of the lighter stone when it was employed to dress, frame and emphasize the darker.



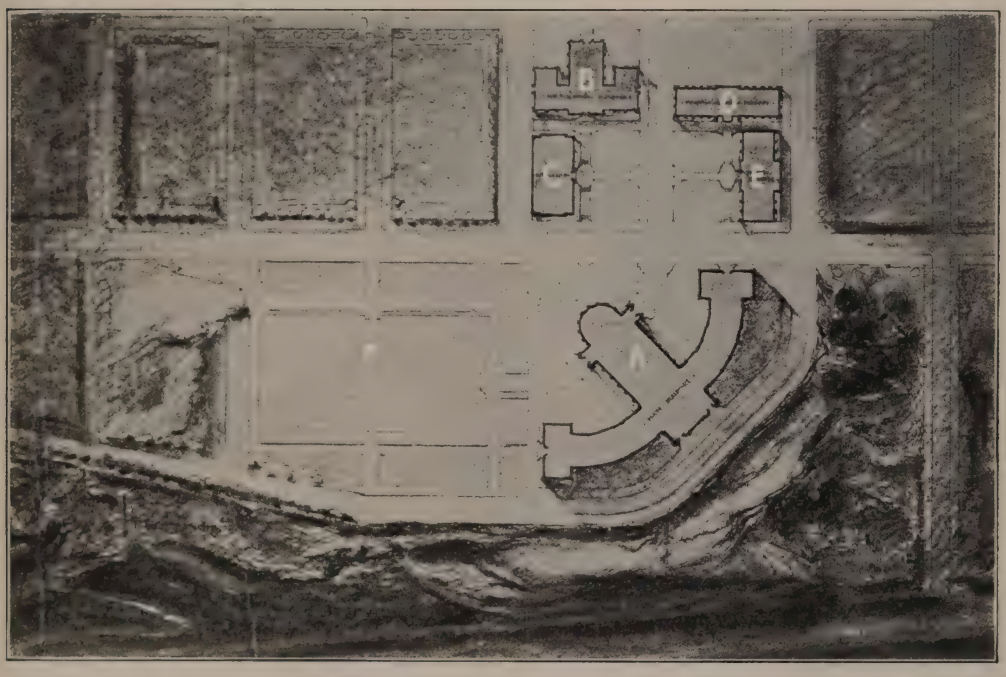
C. C. N. Y.—THE INTERIOR OF THE GYMNASIUM.
Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

But any sensitive observer would say that the attempt was not successful and so far injured the building, in comparison with that combination of a light granite for the field of the wall, and of a dark brownstone for the wrought work, which he introduced and to which he gave such vogue and currency. At any rate, the buildings of the College of the City of New York supply his crucial instance of black "trimmed" with white, for the intractable rock of the wall fields is virtually black and the terra cotta of the dressing is as white as "baked earth" can be made. The glaring vividness of the contrast is, without doubt, a serious blemish on the artistic result. The worst of it is that it will remain a blemish. A light and tractable stone, Caen stone itself, or the lightest in color of our native lime or sand stones, would weather in the course of time into some harmony and conjunction with this rugged black rock which it here adjoins. But this is an advantage that natural material enjoys over artificial. There looks no hope that this staring white will ever grow anything but dirty, or impress the beholder with any other sense of ripeness and mellowness than a general suggestion that it ought to be cleaned. And there is another defect which the contrast of material—this time not in color alone, but in substance—seems to enforce. The intractableness of the rocky wall is evident. The designer would be almost indictable for criminal extravagance who should undertake to shape it more nicely or minutely than is strictly necessary for the production of a firm and thoroughly bonded wall. But then the other material is of an extreme plasticity, of a plasticity of course far beyond that of any building stone which has to be cut and cannot be merely molded and fired. The designer who treats his terra cotta "plainly" would be as blamable as the designer who should treat his trap rock elaborately. He convicts himself of not appreciating the value and advantage of his material. But there is a measure to be observed, and the violence of the contrast of color between the two materials is made more violent yet when the one is treated with the very utmost simplicity and the other with the extreme of elaboration. One would not enjoy seeing a piece of Cyclopean workmanship converted, by the confectioner's art, into a "piece monté." And one has to own that something of this effect is produced by the combination of the rocky wall and the so very plastic and tractable "trimming." There must remain, I think, a note of discordance. The most logical and artistic builders that ever built, the craftsmen who did the French cathedrals, encountered this difficulty and surmounted it, as they surmounted all their difficulties. It is true that the soft stone of the shrines and decorations, even of the structural work, very often, of the interior, was not even of the same generation, by several, with the rugged wall work of the outside. Equally true that the elaborated work of the interior, was entitled, even had it been of the same generation and of the same material, to be elaborated, for the simple reason that it was sheltered. But at least the two things were not meant to be seen together, as they are seen in the College of the City of New York. Take a very "classical instance," the abbey of Mont St. Michel. The exterior is of the tough granite of the adjoining mainland, of a very lucky color and of an expense-defying and heartbreaking elaboration and complexity in the later parts, the apse in particular with its elaborate crocketing and its "lace staircase." "The lamp of sacrifice" must have burned pretty steadily while that heartbreaking elaboration was going on, and the cutting tools must have spent a large proportion of their career on the grindstone. One indeed rather wonders whether the workmen of an earlier age would have expended even this degree of delicacy which the workmen of the fifteenth century gladly expended, even if they had known how. In spite of the later workmen, the lichens that overgrow and mellow their work outrival in this delicacy their



C. C. N. Y.—THE SUBFRESHMAN BUILDING FROM AMSTERDAM AVENUE, MECHANICAL ARTS ON THE LEFT OF THE PICTURE.
Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

granite cutting. But turn from this to the cloister, for which they were able to import a free cutting stone, and the elaboration even of the apse looks almost rude. No observer can fail to note, even in the photograph, much more in the fact, that the workmanship of the cloister contemplated a more facile material than the workmanship of the apse, given, what is in fact given, an equal facility of craftmanship. The carver could play with his Caen stone almost as if it had been terra cotta which he could mold with his fingers instead of with a chisel. He paid his penalty in the transitory character of his work, and these remarks apply not to the restorations of the cloister, where the modern workman, in place of the joyous letting himself go of the ancient, has wrought in his usual sad insincerity. The work of the apse by very dint of the toughness of the material can still dispense with restoration. But you will also observe, if you are the observer we have in mind, and note particularly, that the granite and the sandstone were not meant to be seen together. The Cyclops and the confectioner were scrupulously kept apart. In the College of the City of New York you not only may, but must see them together and their several work as parts of the same design, which they are manifestly not. Not of course that the intractability of one material and the tractability of another may not properly be recognized in the same design without the design's on that account ceasing to be an integral and unified performance. But really, as Horace has it, not to the degree that we see here. The disjunction of material and treatment are together too wide to admit of an artistic conjunction. Snakes do not, for a fact, twin with birds, or lambs with tigers.



C. C. N. Y.—GENERAL PLAN.

A—The College. C—Gymnasium. E—Chemistry.
B—Subfreshman Building. D—Mechanical Arts. F—Campus.

Sed non ut placidis coëant immitia, non ut
Serpentes avibus geminentur, tigribus agni.

It is, of course, trying the author of

this work by a high and severe standard to impute to him such a fault as this. But his work vindicates his right to be judged by such a standard. At any rate, this is the only general or radical criticism that one has to make on work with which it would be ungrateful to cavil, so much pleasure does it give, so much thought and artistic sensibility does it show, so distinctly is it above the level of convention and commercialism to which alone the bulk of our current building aspires. One should say early, and if necessary repeat often, that the College of the City of New York is very far above that level, that, in its kind it is the best we have to show, that it is a distinguished, and in places, a charming, yes, a charming success.

A general plan cannot have charm, cannot have even the promise and potency of charm, until you know what the author means by it. What it can have is rationality and the satisfaction of the practical requirements with dignity as well as with convenience. In the present instance the general plan itself exhibits a spaciousness which assures one beforehand that the buildings when they come to occupy their several allotted stations, shall be so detached as to be well seen, to be seen virtually all around, and thus to provide architectural as well as practical satisfactions. It is a liberal plan, and this without reference to the "campus" on the southward. Truly, this latter may be only a temporary and provisional reservation, salable when it becomes an expensive luxury. One hopes not, even though the all work and no play which makes Jack a dull boy does not seem to have the same effect on Abraham. But even if the municipality should some day conclude that the athletic field is too purely a luxury for the city to afford to even these pampered minions of the public school system, there will be ample space and verge enough for a dignified and liberal effect as well as for abundant illumination, within the confines of the two blocks indefeasibly reserved for educational uses. A great part of the space bounded by the quadrant of the eastern front, and bisected by the church-like mass of the building fronted by the great tower, is as available for the architectural purposes of foreground and setting for the buildings to the westward, as for the practical securing of air and light to its own buildings, and conversely and even more emphatically with the quadrangle of the westward block. When one begins to compute the proportion of built to unbuilt spaces, leaving out the campus altogether, he comes to perceive that the disposition is as truly economical as it is dignified, that, given the area and topography, it would puzzle and probably baffle him to propose an alternative disposition which would so usefully employ so large a proportion of the available space, and that the air of liberality and spaciousness which the arrangement conveys is in fact a "by product" of the successful adjustment of practical means to practical ends. This is worth emphasizing for the reason that it will hardly occur to the casual observer; least of all to the observer infected with a cheese-paring view of municipal economy. This latter will be tempted to say that, merely because the actual arrangement does give this air of liberality and dignity, it must therefore necessarily involve "a waste of room." Even consigning "Gradgrind" to his own place, it is worth emphasizing because it so exemplifies and vindicates the particular architectonic talent of the author, a talent which amounts to a genius for simplification and for the perception of the essentials of a complicated scheme. It also places the essential authorship of the design beyond question. No matter how much of the detail may have been done by anonymous assistants "in the office," the author of this "lay out" is the architect of the College of the City of New York.

After having synthesized to this extent, but not before, we may in justice to ourselves as well as to the architect, go on to analyze, which is to say to consider the several buildings which go

to make up this dominating and unifying conception of the whole. And one remarks in the first place that "mediaeval" as the architecture is superficially, essentially it is much more modern than most collegiate architecture which prides itself upon its modernity, which is to say that it is of the last Paris fashion. When you have an Oxonian curriculum, it is comparatively easy, given those two trifles of temperament and skill, to do as the Oxonians do. "The fair humanities of old religion" are qualities comparatively as easy as attractive to enshrine. In the college building, and in the sub-freshman building, it was open to the architect to take the ground that he was housing "the humanities," and to fall back upon the precedents for such a lodgment which abound in the university cities of England. Daniel Webster once remarked that Gothic architecture ought to be called English architecture because the principal examples of it were in England. The remark only shows that the godlike Daniel did not know much about Gothic architecture, as indeed, how should he or any other New Englander of his generation? But if he had confined it to collegiate Gothic, he would have been on very safe ground. Daniel is said to have burst into tears the first time he entered the transept of Westminster, though it is not to be supposed that it was the architecture which so affected him, but the "crowd of remembered associations." The educated American man, if he be educated in the old-fashioned way, may well be pardoned for feeling a lump in his throat the first time he paces the High Street of

That sweet city with her dreaming spires,

"Oxford, spreading her gardens to the moonlight and whispering from her towers the last enchantments of the Middle Age." Familiarized with it as he is beforehand by photographs, he must feel the surrounding architecture to be an hereditary possession of his own, and himself the continuator of its tradition. Unless, indeed, he has abjured the humanities in favor of "electives," in which case it is quite conceivable that Oxford may have nothing to say to him at all. But even in that case he is bound to recognize that it is a "collegiate architecture" which he beholds.

And yet collegiate Gothic does not fill the whole architectural bill of a modern college, any more than the "seven liberal arts" comprise its whole curriculum. Neither the charming Tudor which was the picturesque degeneration of the Continental Gothic, nor the not less charming Jacobean into which it imperceptibly slipped, and which is equally the picturesque degeneration of the Continental Renaissance, supplies the precedents for a power house under the name of a building of Mechanical Arts, nor yet for a Chemical Building, nor yet for a gymnasium, though for the two latter it would be comparatively easy to "keep in style" by adapting precedents. The chimney of a power house, however, is a modern and intractable requirement, and the aim of the architect has apparently been, while supplying to perfection all practical requirements, to furnish the front of each building with an attractive and distinguishing feature of its own, while retaining the general sense of unity of style, and keeping fairly within the bounds of collegiate Gothic. One can only congratulate him on his success. He seems to have been a good deal hagridden by his committee about the practical requirements, and in almost every building one can seem to see that he has been beset to whittle down the amount of plain wall architecturally essential to the display and framing of his "features." One can conceive him at times becoming very weary of the reiteration of the demand of the dying Goethe for "more light" on the part of supervisors ignorant or careless that they were insisting on his turning his walls into mere sash frames. It is interesting to note how he loses no opportunity, when the pressure is removed, of working in an expanse of unbroken and effective masonry; sometimes, one must own, where it would not have occurred to him to emphasize



C. C. N. Y.—ASSEMBLY HALL AND SOUTH WING FROM THE QUADRANGLE.

Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

the unbrokenness of the wall if he had been left quite free. For if there be any architectural proposition that one is entitled to lay down dogmatically, it is that a wall—of course provided that it be a real construction of masonry, and not the mere veneering of a metallic skeleton, should be solid at the bottom and light at the top. This precept the exigencies of this case have forced the architect to violate, not only in the crenellated tower of the sub-freshman building, facing the quadrangle, where by far the most solid part not only of the tower, but of the whole front, is what would be the belfry stage, but also in the eastern front of the great central tower of the college itself, where an unbroken expanse of two stages of black rubble surmounts a liberal fenestration in white terra cotta. True, in the latter case, the architect has managed by his clever device of accommodating his entrances in projecting porches at the sides to give the actual base of his tower a negotiable aspect of murality. True, also, in the former he has managed to give a negotiable aspect of abutment to the entrance arch, though here at the center of the base. But one cannot help seeing in either case that the voids and the solids would not have been disposed as they are if the tower had been designed simply as a monumental feature, and without regard to utilitarian exigencies. And at these points, too, appears in its sharpest light the misfortune he has undergone by his choice of material. It is so very plain, especially in the tower of the sub-freshman building, how much it would have gained in effectiveness if the crenellation and the quoining and the "trimming" had been in the darker material and the wall field in the lighter. This does not prevent these features from being very good. In fact, every feature is very good. The intractable chimney of the power house becomes one of the best of all, thanks to the manner in which it is projected from the wall face, and incorporated at the base with the admirable little porch with its two entrances. The feature in the front on the quadrangle of the Chemical Building is the whole central division. The wings are but sash frames, and no art could make them anything else. But this middle third is kept gratefully solid, and nothing could be better than the manner in which its central feature, the oriel over and including the entrance arch, is framed and set off by the rough wall on either hand, and surmounted by the projecting crenellation and the withdrawn gable rising in the rear. The feature on the quadrangle of the gymnasium is the rich and deep entrance arch at the center. And here, luckily, the practical requirements did not interfere with the most effective fenestration and the most eligible disposition of voids and solids. Here almost alone one does not feel that the architect has been unduly hampered in these respects. Not only is the solid and rugged tower at the angle an effective abutment for the ranges of openings divided by buttresses even though

> Buttress and buttress alternately
> Seem framed in ebony and ivory

in a very different sense from that intended by the poet. The withdrawal of the plane of the upper wall from that of the flanks and of the substructure is admirably managed, and the expanses of wall it has been found practicable to introduce under the high windows of the gymnasium itself, with the sufficiency of the framing, give this front an aspect of massiveness more satisfactory, perhaps, than it has been practicable to impart to any other, with the conspicuous exception of the avenue front of the sub-freshman building, which is all wall. Here one imagines that the architect, having been specially goaded by the urgency of the Mehrlichters in the side walls, in which the solids are in fact reduced to the extreme of tenuity, has seized the opportunity for revenge in making the front entirely solid, since the deep archway and the little side windows of the ground floor, like the niches above, rather punctuate and emphasize than disturb



C. C. N. Y.—THE GENERAL ASSEMBLY HALL FROM THE NORTHWEST.

Washington Heights, New York City. (Photo by J. H. Symmons.) George B. Post, Architect.

its massiveness. At any rate it is a delightful and picturesque feature.

Nevertheless, the crowning success of the whole group is without doubt the college building proper, or rather its most conspicuous and monumental feature, the churchlike, almost cathedral like, building, which interiorly is so largely given up to the chapel, synagogue, or ecclesiastical edifice "quelconque," that is in fact uninvidiously known as the "Assembly Hall." The swinging quadrant of the wings, both on the convex outer front of the street and the concave inner front of the quadrangle, doubtless suffers architecturally, both in the wings themselves and in their capacity as frame and setting for the central and monumental edifice, by their utilitarian requirements, and perhaps also by the pains that have been taken to dissemble these and to architecturalize the wings. The excess of aperture over frame is aggravated particularly here by the staring contrast of material, and the number and variety of the gabled bays rather call attention to the architect's misfortune than overcome it. One questions if a plainer and more monotonous treatment of the curtains between the terminal pavilions and the flanking pavilions of the central tower would not have conduced more to the total effect than this alternation of rather elaborated features, which is fairly chargeable with restlessness. But of the central building itself one can speak but in hearty praise, and this almost equally whether he is considering the frontage of the tower, the tall buttressed flanks or the apsidal "chancel" with its flanking towers.

The tower is, without doubt, an example of "collegiate Gothic," but yet an example so beyond its precedents in scale that it seems to have been their predecessor. It was a very happy thought to set this solid and reconciling feature at the center of the two utilitarian wings, and to swell it so beyond the precedents. Even though it might, and should have, "beetled" much more emphatically and effectually over the brow of the cliff, it is a most impressive performance. Beetling effectually or not, it effectually belittles its lineal ancestors. I have no means of exactly scaling it, but certainly the impression that it makes in place is that the towers of Magdalen and Merton and St. John's were mere toys and childs' plays in the comparison. And, quite possibly, one perceives in looking up to it from below, the solidity of the upper stage, which we were just now commiserating as enforced, may have been entirely meant for impressiveness from the proper point of view. It has the cloistrality and the charm, this work, of its originals, while, by dint of its superior scale and possibly of the very aggressiveness which comes from the contrast and conflict of material, it has vigor, spirit and "bite" beyond its originals. At any rate, this tower and its appendages are unmistakably "collegiate English Gothic." Going about to the bays of the flank, still more to the apsidal "east end" (as a matter of fact the west end), one loses the impression of collegiate and even of Anglican work. It is not to England but to France that these grandiose erections owe their origin. Or if from England, from such un-English and exotic Gothic as Canterbury or Westminster. It is from Canterbury (is it not?) that the architect has derived his notion of framing that un-English apse between those two only partially domesticated and naturalized transeptual towers. Non equidem invideo; miror magis. And equally one does not cavil but heartily admires, when he beholds the ingenuity with which the apse of a fully developed Gothic minster has been separated from its original service of cutting off the choir from the nave and flooding the former with "a privacy of glorious light," and abased to the prosaic uses of tiers of lecture rooms or studies, as the case may happen to be. This is mingling the useful and the agreeable in a singular way, and carrying every point. One does not envy either the bigoted rationalist or the literal archaeologist who complains that these

charming features have been perverted from the purposes of their creation when they have been adapted to purposes practically so useful and architecturally so delightful.

There is no space left for a detailed appreciation of the detail. To understand how good it all is one must go and see it in place. One must do that also to see how thoroughly with all the individual spirit it shows, it is a carrying out and a "detailing" of the spirit of the general scheme. There are very few pieces of Gothic, indeed, accessible to the New Yorker, which show intrinsically so much quality and such successful artistic pains. There is none at all which more conclusively vindicates the choice of the style for "collegiate" purposes. The old Columbia building in Madison Avenue being now submerged, there is not much collegiate Gothic to which one can point, and less yet to which one can point with pride. There is, to be sure, the Teachers' College, a maimed and stunted performance, good as it is in itself, blighted by the shadow of the neighboring and pompous and official buildings of the new Columbia. There is away down and away west in Chelsea Square, the delightful group of the General Theological Seminary, where the designer has shown what can be done with the cheapest materials and the most economical dispositions, but in which he has not by any means been allowed such a scope and verge for the exercise of the fantasy of his craft as the designer of the College of the City of New York has enjoyed and improved. So there is really no rival in the way of collegiate architecture to this delightful and inspiring group of buildings, upon which everybody concerned, even the Mehrlichters, is so thoroughly entitled to be congratulated. It remains to be said that in no other institution whatever could the "fair humanities" of a picturesque and romantic architecture be more useful or more educative to those who are its occupants than precisely in the College of the City of New York.



DELLA ROBBIA FAIENCE.



DELLA ROBBIA FAIENCE.



DR. WILLIAM RIMMER.

Dr. Rimmer

Dr. William Rimmer was born in 1816 and died in 1879. He spent his life in Boston and New York, where he made a fine reputation and is still remembered with affection and reverence. He was a splendid personality, brilliant, rather antagonistic, but extremely dignified and refined, and endowed with marvelous sense of form and exalted artistic sensibility. He came from the masses, and might have remained with them but for a persistent determination toward self-culture, which he held to with a firm will and relentless self-examination—a course which, with a strong and healthy mental constitution, logically leads to the finest type of character in a democratic country like ours. He drifted into medicine, probably largely because the dignified personality which he had made for himself required dignity of station and avocation. The choice was a fortunate one. He had inherited a tendency toward art, a keen appreciation of the beautiful. This, with his athletic constitution and the adequate knowledge of anatomy required for a physician's career, combined to create a predisposition toward the critical study and representation of the human body.

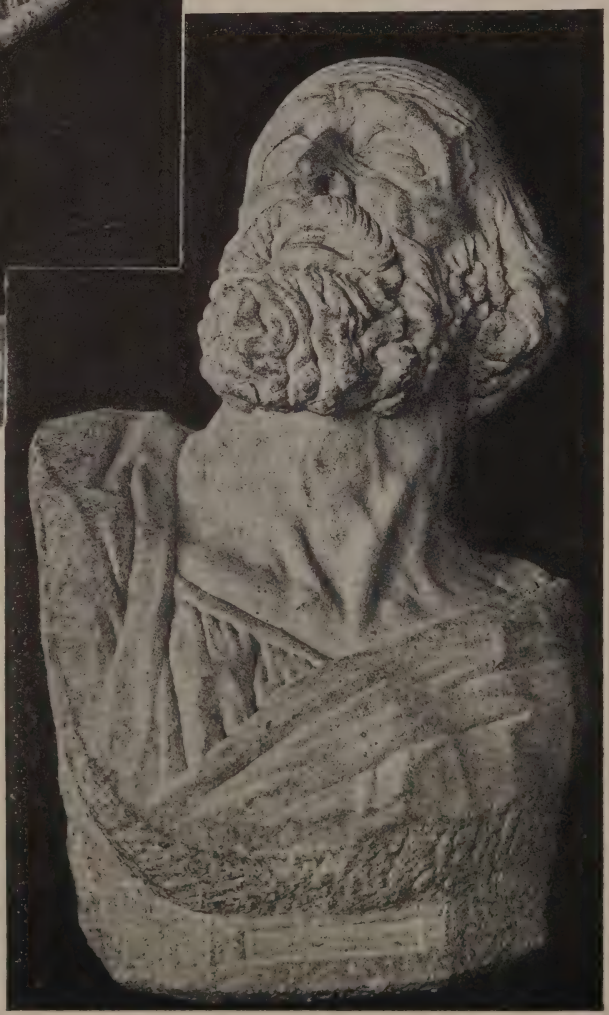
This predisposition was strengthened



Head of a Woman in Granite.

and nourished by the excellent material which he found for study. Quite early in the nineteenth century there were created in this country two good collections of casts of antique sculpture. The most important was that of the National Academy of Design in New York, which was nearly destroyed by fire a few years ago. The other was that of the Athenaeum in Boston, which was taken over to the Museum of Fine Arts when this institution was created. The fine Boston collection was Rimmer's school.

Greek sculpture is based on the athlete. This vigorous people appear always to have enjoyed physical exercise, and the premium placed by society upon fine physical development gave to the representation of it extreme interest and value. The charming mythology and customs of the people furnished abundance of fine subject matter; but the character which they used to express it was always the human body modeled on the types of the palestra, and always expressing the perfect intellectual charm and delicious culture which can only rest upon fine health and complete physical



Head of St. Stephen in Granite.



DESPAIR—A STATUETTE IN PLASTER.



THE FALLING GLADIATOR— A STATUE IN PLASTER.



THE FALLING GLADIATOR—VIEW FROM SIDE.



THE DYING CENTAUR.
A statute in plaster in the Museum of Fine Arts, Boston.



THE DYING CENTAUR—BACK VIEW.

development. The palestra had definite types, so definite that canons or schemes of proportion were formulated and statues made to perpetuate them. It was the hypothetical human animal, combining all possible excellencies, which the Greek sculptor had before his mind.



IDEAL BUST IN PLASTER.

With thousands of athletes, bronzed in the sun, resting superbly or flashing brilliantly in violent action, the general impression became so dominant that the individual was invariably obliged to yield to it.

The sculptor was not assisted by anatomy, but worked from the outside by a system of points. These points were projections or depressions, accents of the surface which expressed the position of underlying parts, fixed when related to bones, changeable when related to the soft parts. For instance, the structural parts of the knee which come to the surface have their effect through the integuments upon the modulation of that surface. The sculptor noted carefully the relation of the projections and depressions thus created as they presented themselves in many models and in many phases of action. These points were valuable to him, both struc-





FIGHTING LIONS. A STATUE IN PLASTER IN THE BOSTON ART CLUB

turally and proportionally. It was not only necessary that they should represent actual conditions correctly; the result must be beautiful as well. The Greek was dominated by his superb sense of beauty in abstract line and quantity. He gave to his statue the same balance, suavity and grace which he gave to a vase or column. Proportion, as felt by the artist, was partly the realization of types found suitable to the various tasks of the palestra and battle field; but it was also greatly influenced by a sense of refinement and charm in line and mass—precisely the same tendency which lead to the creation of the various orders of architecture, with their fixed relations and refinements.

It was a little company of these supreme types which presented themselves to Dr. Rimmer in the halls of the old Athenaeum; an athlete himself, healthy and vigorous in mind and body, and endowed with an epic quality of imagination which appears only at rare intervals in any age or people. He found true companionship in association with the "Vatican Athlete," the "Vatican Mercury," the "Silenus," the "Doryphorous" and their like; quite the usual casts, which the ordinary Academy student draws with so little appreciation of their inherent importance.



OSIRIS. A STATUE IN PLASTER.

Rimmer was an excellent anatomist, probably one of the best of his time. The details of human structure were thoroughly part of his consciousness. He applied this knowledge to the analysis of the classic statue. He recognized at once the system of points elaborated by the Greek sculptor, and gave them a valuable name, "points of interest." Every one of the statues which came under his observation was resolved into its "points of interest," and for each of these points the structural reason was sought. One of the most valuable results of his research is the fact that adequate anatomical explanation was universally found for the intricate accentuation of the modeled surface; that is, the Greek statue, made without anatomy; proves right when subjected to the most careful anatomical analysis.

Rimmer realized also that the object of the ancient sculptor was not merely correctness, but beauty as well; that it was by means of these fixed and changing points of interest that he worked out his scheme of proportion. It was this finer phase of his study which appealed most powerfully to his tempera-

ment. Rimmer formed his artistic judgment on the same principles which he had followed in the formation of his character. His choice in art was always the better rather than the worse; not the most powerful, not the most effective, not the most realistic, but the most dignified, the most refined, the most beautiful; in short, the most valuable.

In this higher analysis of the Greek statue he had been preceded by Canova; but there was a fundamental difference between the men. Canova was a splendid personality, large, dignified and genial, but essentially negative and cold. In his study of Greek sculpture he felt its thoroughness of structure and its harmony of proportion, but only so deeply as to make him master of its conventions. The immense spiritual power underlying the conventions did not reach him. In his synthesis he simply imitated Greek sculpture in a way which is dignified and charming, but entirely colorless. Michel Angelo did precisely the reverse. He received and could carry the full spiritual current of Greek art, but never realized the importance of the system of conventions, canons and laws which held in control these vast artistic forces, and made them valuable. A fine Greek statue acted upon him as an impulse, or key, which excited his own powerful temperament to exaggeration and overexpression.



FALLING FIGURES. DRAWING TO ILLUSTRATE FORESHORTENING.

Thanks to the provincial limitations of his environment, William Rimmer must always hold a lesser place in the world's record than either of these men in whose company he naturally placed himself, but he did precisely what Michel Angelo and Canova failed to do. He was strong enough to carry the full current of Greek inspiration, and intelligent enough to appreciate the laws which controlled it and to obey them. It may seem presumption to compare William Rimmer with Michel Angelo, but Rimmer actu-

ally was the better draughtsman. Any competent person who has watched his sharp cold chalk point in its development of problems in foreshortening and dramatic action will understand my opinion and support it.

The fine personality of Dr. Rimmer and the importance of the problems which he had set himself to solve, as well as the adequacy of his solution, were recognized in Boston almost as soon as they had fully defined themselves. It was also apparent that the number of people with culture sufficient for the appreciation of such large results must be small anywhere, and especially in a provincial American city in the Civil War period. It was not easy to discover a way in which proper opportunity might be given to make permanent expression of these splendid conceptions. To the credit of Mr. Steven Perkins of Boston it is that a solution of this problem was found. He provided Dr. Rimmer with the assistance required to make a life-sized nude statue, which should embody the principles which had been elaborated with so much enthusiasm and intelligent research. Rimmer was then a poor physician practising among the quarry-men in Eastern Massachusetts. He had cut some fine heads in the hard granite of the region. In the basement of his little house in Milton, in the intervals of his arduous practice, and without any proper experience of the necessary practical conditions of sculpture, he executed the statue of the "Falling Gladiator," which certainly comes nearer than any work of modern times to an adequate realization of the fundamental principles of Greek Art.



LUCIFER. A DRAWING IN THE MUSEUM OF FINE ARTS, BOSTON.

The "Falling Gladiator" was exhibited in Boston and New York, and for

many years held an honorable place in the Boston Museum of Fine Arts. It was exhibited at the Paris Salon in 1863 and a copy was sent to Florence, where it was much admired. A fine cast is now the property of Columbia University and is permanently exhibited in the Henry O. Avery Architectural Library. Dr. Rimmer's Gladiator is, therefore, pretty well known.

The main purpose of the "Gladiator" was academic; but the statue itself is made the statue than the strength of the man represented. It is a fine anatomical study, but is not aggressively so. Structure is expressed only to the point required by the conditions of the subject. Anatomy to Rimmer and to all great artists is the ensemble of human construction, the entire organism, filled with life and spirit and energy, not a mere set of bones and muscles. The modeling is extremely beautiful, a soft undulation and careful knitting together



VICTORY. A DRAWING.

not entirely so. It is far from being an *ecorché*. It was impossible for a temperament so finely emotional and artistic to treat any matter, however important, entirely from a scientific point of view. The "Gladiator" is superbly dramatic, although not overexpressed. It has, to a degree which is rare in any period, an extraordinary expression of vitality and power; not through colossal size and muscular development, but in sustained tension and vivacity. One feels rather the force of the man who of surfaces which is unrivalled except in Greek sculpture. Quite fortunately for him and for art, Rimmer did not learn modern methods of modeling; which have a tendency at times to exaggerate technical effects. Modeling to him expressed the absolute surface, and was concerned solely with structure, curve and modulation. This is precisely the classic point of view. Even in the Greek terra-cottas accidental or technical effects are rarely resorted to.

There has been cause for surprise

in the fact that Rimmer did not graduate from the "Gladiator" into large practice as a professional sculptor; to the making of busts, statues, monuments and decorative work. He came precisely at the moment when many American sculptors of less ability were earning moderate but honorable fortunes in their studios, in this country and in Italy. The reason for this was doubtless largely temperamental. His lofty idealism, his habitual state of reserve and poetic exaltation led naturally to impracticability. He received commissions and executed them faithfully and well; but was interested chiefly in the fertile fruition of his own imagination, and it was especially when evolving these fine inventions that he rose to the heights which he was capable of reaching.



GLADIATOR AND LION. A PAINTING.

For his support Rimmer had recourse to teaching. He formulated a course of lectures on artistic anatomy, which he gave to public classes in Boston, New York and nearly all the secondary towns of the Northeast, for 16 years. The method of his enseignement was extremely intelligent. It was mainly an elaboration and explanation of the processes through which his own mind had passed in its analysis of the classic statue, and in the synthesis of the "Gladiator." He used the blackboard and a fine chalk point, working first analytically, developing structure; the actual status of bone, muscle, tendon, integument: then synthetically, recombining the parts in their actual and ideal relations. In the study of the head, for instance, the human skull, in all its relations and in innumerable positions, was drawn with great beauty and fineness of line, and upon it was developed in the same way the muscular and integumentary superstructure. The comparative anatomy of the subject interested Rim-

mer extremely and was carefully given in parallel drawings. He had many unique notions of the manner in which human peculiarities and characteristics are shadowed forth in the types of the higher animals, which he drew and modelled with a power not surpassed by Barye himself.

After the anatomical analysis had been carefully elaborated synthetic composition and invention followed. It was in this especially that the artistic power of the man was displayed. The blackboard was covered with heads of men and animals in every position and of every age, all drawn with extreme intensity and refinement.

Naturally the Doctor was most at home and did his best work in the description of other parts of the body; but his method was the same. First a careful and thorough analysis, then his superb synthesis. The development of foreshortening was constantly applied to the parts discussed and to the entire body.

The object of Rimmer's instruction was not only to show what is, but also what ought to be; what is the construction, form, proportion and action of the perfectly developed type. In this he did what the Hellenic masters accomplished in their canons, and in the statues which were made to embody their canons. But Rimmer went farther than this. Greek sculpture taught him, and in his splendid periods of philosophical introspection and poetic reverie, he also discovered in his own experience that the higher spiritual harmonies are the natural fruit of perfect physical harmonies. Every lecture was accompanied with a delightful rhapsody in which his unique conceptions of the spiritual side of art were developed.

This was precisely the point of view of the men who wrought the Parthenon statues. Phidias was of the same race as Plato and Pindar, and educated by the same environment. But the Greek sculptors had the athlete and did not need anatomy. Rimmer did not have the athlete, and the ordinary nude model of the studios was repulsive to him; he rarely employed one, and then usually to show imperfections, things to be avoided. He could reach the large, general ideal which he sought only through anatomy.

This point of view of the Greek sculptor and of Dr. Rimmer has been abandoned by modern art. We appreciate Greek sculpture and take advantage of its firmness, correctness, balance and symmetry in teaching beginners to draw, but its influence often stops there. The nude model follows the plaster casts in our schools of instruction, the representation of personal peculiarities, accidental effects of modeling, of light and shade and action, interest the sculptor. All this is valuable, but not so valuable as that which has been lost, and can only be recovered by the labors of an artistic Herakles like Rimmer.

Quite the most painful part of Rimmer's history is the fact that a large part of his best work was done on the blackboard under the inspiration of his classes, and immediately destroyed when the exercise closed. Realizing the artistic waste of this method, his friends induced him to compose a book which should embody his principles and methods. Rimmer's "Art Anatomy" was published in 1877 and is quite the only work on the subject which has any true artistic character. The published books on artistic anatomy are almost without exception crudely composed briefs of the ordinary dissecting room manuals; one good copy of Gray's anatomy being worth more to an artist than the entire body of this literature. Rimmer's anatomy is a positive and important work of art, like the ceiling of the Sistine Chapel or the Last Judgment. The purpose of Michel Angelo in these works was largely educational, to show what could be done with the human body, its vast possibilities, structural, artistic and emotional. This was exactly Rimmer's point of view in everything that he did and especially in the "Art Anatomy." It is as an epic like the Iliad or the Sistine Chapel.

Anyone who appreciates fine line, who loves a good drawing by Holbein or Mantegna, should study the "Art Anatomy." It is as sensitive as Holbein, as tense and severe as Mantegna; although

its epic quality is quite unlike either of these masters.

The number of completed statues left by Dr. Rimmer is not large. The "Gladiator" has been described, the "Alexander Hamilton" still stands in Commonwealth Avenue in Boston. The "Osiris," a charming proportional figure, which Dr. Rimmer always mentioned with especial affection, was formerly at the Cooper Institute, but has disappeared. His great



THE ADVANCE. A DRAWING.

qualities as an animalist are immortalized in the group of "Fighting Lions" at the Art Club in Boston and the "Dying Centaur" at the Museum of Fine Arts in Boston, of both of which works there are fine casts at the Avery Library. A bronze cast of the Centaur has been presented to the Metropolitan Museum of Art in New York. All these works have the large quality which the old sculptors delighted in.

Rimmer learned to paint early in life, and executed many portraits of New England people, some of which are excellent, and are carefully preserved by their owners. He enjoyed especially, however, a small canvas, not more than a foot in dimension either way, and a heroic or intensely dramatic subject which he elaborated in a style and technique curiously suggestive of Salvator Rosa and the little cluster of battle painters associated with him. These pictures were not striking in color, but always strong, correct and agreeable. The drawing, composition and dramatic presentation often reached that higher region of poetic and artistic exaltation which was Rimmer's favorite atmosphere.

These few words and the many illustrations which we publish may assist in recalling to the artistic public a fine personality, which it knew well at one time, and in restoring to him the high place which he once held, and still deserves to hold. A many-sided man;



THE MOUNTAIN. A DRAWING.

a sympathetic physician; an excellent musician; a perfect anatomist; not an archaeologist, but the only man since the Hellenic period who has thoroughly comprehended the fundamental principles of Greek sculpture; a painter interesting always, and occasionally supreme in the expression of his favorite moods. But this was not all. The few who were admitted to his friendship knew the great heart of a strong man, they remember well the dignified, courteous demeanor, the abundant conversation, the genial smile; and the deep, musical voice which bespoke the gentleman and master.



MORNING. A DRAWING IN MUSEUM OF FINE ARTS, BOSTON.

draughtsman whose natural sense of form was so intense and powerful that it needed no training, a sculptor who is to be compared with only two or three of his time, and with none in the peculiar field which he chose to occupy. A

Edward R. Smith.
Librarian Avery Architectural Library.

The drawings which we publish in this article are from *Art Life of Dr. Rimmer*, by Mr. Truman H. Bartlett, to whom we are indebted for the privilege.—*Editor.*

Unknown Westminster Abbey

Architectural Nooks and Corners of the Grand Old Fane Never Shown to the General Public

Not one generation, but six long centuries of history, did the building of Westminster Abbey take—the national Walhalla or Temple of Fame of the English-speaking world. Truly the great are here. Monarchs from Saxon days unto Elizabeth, and on to the effete Georges. Poets, too, from old Chaucer to Tennyson; the armored knights and king-makers; great ministers and explorers. Music is represented by Handel and Balfe; Science by Newton, Herschel and Darwin; Religion by Wesley, Wilberforce and Livingstone.

But why continue? The vast edifice awes the least imaginative. Its history goes back to the dim days of Sebert, King of the East Saxons; and ages before him in Roman days the site bore a Temple of Apollo. But the general impression of Westminster Abbey's visitor is best voiced by our own Washington Irving. "It seems," he says, "as if the awful nature of the place presses down upon the soul, and hushes the beholder into noiseless reverence. We feel we are surrounded by the congregated bones of great men of past times, who have filled history with their deeds and the earth with their renown."

The Church begun by Edward the Confessor nearly a thousand years ago was in the shape of a cross, with an apse, a central tower, and two western ones topped by short spires. Its architecture was heavy and solid, with flat buttresses and round-headed windows. The old Norman cloister is quite gone; but in the East Walk of the present one, beyond the entrance to the Chapter House, there are low doors leading into vaulted rooms of true Norman work, which formed the basement of the monks' dormitory, where the Norman abbots ruled supreme.

It was Henry III. who began the church as we see it now, by laying the foundations of a Lady Chapel at the east end of the Norman apse. A generation later the Abbey must have looked most curious. First came the low Norman nave with its western towers; then east of it the tall early English choir and transepts, with their huge flying buttresses; while all the surrounding buildings except the Chapter House, were in the original style.

So slowly did the great fane progress all down English history, that two hundred years later, when the Gothic style came to an end, the western towers were still unfinished, and fell to the uncongenial hand of Wren, who designed a western front whose only merit is that in its main lines it faintly resembles a Gothic building.

But it is not of the ordinary features of the Abbey I would speak, but rather of the ancient remains of the monastic buildings, where ages ago, before painting was invented, the monks wrote manuscripts, read, practised singing, taught school, baked bread, brewed ale, and generally acted the part of "fathers" to the people.

In the cloisters you will find the graves of the Abbots from the Norman Conquest until 1222; and in one of them are the remains of twenty-six monks carried off by a terrible plague.

Personally I had the advantage of the Dean himself as cicerone, and as a result ancient doors of a thousand years creaked on their hinges for us, and let us into dark, musty, rat-haunted chambers that had not been opened since the days of Shakespeare. From the East Walk of the Cloisters we passed through a grand old portal, once painted and gilt, into the vestibule of the Chapter House —"The cradle of all free parliaments." It stands on a small crypt, and is 58 ft. in diameter.

This famous chamber was begun in



VIEW LEADING UP INTO THE ANCIENT CHAPTER HOUSE—"THE CRADLE OF ALL THE WORLD'S FREE PARLIAMENTS."

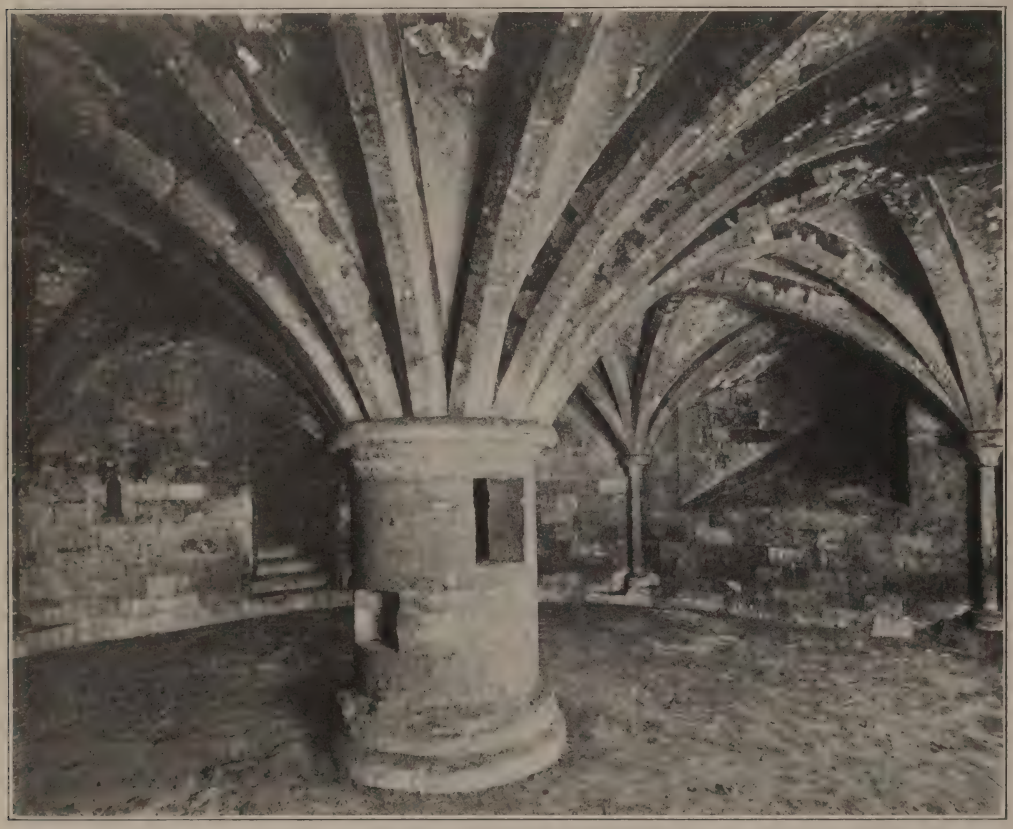


THE JERUSALEM CHAMBER, WHERE THE GREAT DIVINES MET TO REVISE OUR BIBLE IN JACOBEAN DAYS. (SEE TEXT FOR ROMANTIC HISTORY OF THIS ROOM.)

1250 by Henry III. The monks frequently held meetings here, and passed in solemn procession through the vestibule when the Abbot and his four chief officers took their places in stalls on the East Side, beneath a giant crucifix; while the humbler monks sat on stone seats around them to discuss the affairs of the Abbey. There were readings and catechisings and penitential discipline of a most rigorous order. The floggings of the elder monks took place before the central pillar.

But this hoary chamber gradually became the meeting-place of the English Parliament, soon after the separation of the two Houses in the reign of Edward the First. And it remained the scene of their deliberations until they removed to the Chapel of St. Stephen in the old Palace of Westminster, granted to them by Edward the Sixth in 1547.

They sat for the last time in the Chapter House on the last day Henry VIII. spent on earth; and passed the attainder on the Duke of Norfolk. For generations after the Parliament removed, the Chapter House was a mere neglected store-room; but in 1865 Sir Gilbert Scott was asked to restore it as far as possible to its original state. Six of the great windows were restored after the pattern of the seventh; and the cost of one of them was defrayed by American pilgrims.



THE ANCIENT TREASURY OF THE KINGS OF ENGLAND IN THE CRYPT UNDERNEATH THE CHAPTER HOUSE. FROM THE HOLES OF THE CENTRAL COLUMN THE KING'S MONEY WAS STOLEN IN 1303, WHICH HE HAD RAISED FOR AN EXPEDITION AGAINST THE SCOTS.

The crypt beneath was for centuries the Royal Treasury, where the Regalia and vast sums of money were stored. I went down into it especially to examine the holes in the great central column,



THE GREAT STONE DOOR LEADING TO THE PYX CHAPEL. ITS INNER SIDE AND SIDES OF THE DOOR WITHIN ARE LINED WITH HUMAN SKINS. THERE ARE SEVEN LOCKS TO THE OUTER DOOR, WHICH CAN ONLY BE OPENED IN THE PRESENCE OF GREAT OFFICERS OF STATE.

which in 1303 contained the whole of the king's gold, which he had raised for an expedition against the Scots. To his dismay and horror the money was all gone; and the Abbot, with 48 of his monks, were sent to the Tower of London on suspicion of knowing something about this disastrous theft.



THE MOST CLOSELY GUARDED SPOT OF THE ANCIENT ABBEY—THE CHAPEL OF THE PYX, WHOSE STONE DOOR IS GUARDED WITH SEVEN LOCKS, AND CAN ONLY BE OPENED IN THE PRESENCE OF GREAT OFFICERS OF STATE. THIS WAS THE ANCIENT MINT IN MONASTIC DAYS AND IN THE TIMES OF THE SAXON KINGS. THE ALTAR WHERE THE GOLD WAS MELTED IS JUST UNDER THE WINDOW.

They were only released after a long trial, which resulted in the conviction of two officers of the monastery. After this the stores of gold and silver were transferred to another chamber, but the Royal Regalia—crowns and sceptres, with jewelled vessels of gold and silver—remained in the little chapel until they were removed to the Tower after the Restoration.

But the chief remains of the old Abbey are to be found in the Chapel of the Pyx. This is never shown to the ordinary public, since it happens to be the most inaccessible part of the whole vast and ancient structure. Even the present Dean and Chapter of the Abbey cannot open its great door, guarded with seven locks, save in the presence of certain great Officers of State.

This, the most closely guarded spot in the Abbey, was the ancient Royal Mint; and the pure gold for the nation's coinage was melted on its altar, which may



THE REMAINS OF THE ELEVENTH CENTURY ST. CATHERINE'S CHAPEL, THE CHAPEL OF THE MONASTIC INFIRMARY, SHOWING THE FEW ARCHES OF TRUE NORMAN TYPE THAT REMAIN.

be seen just beneath the crumbling window. Diplomatic correspondence of high antiquity, and the wooden "tallies" with which the accounts of England's Exchequer were kept, were stored in the chests and presses seen in the photograph reproduced here. And in this strange little chamber, too, took place every year the curious "Trial of the Pyx," or testing of the new coinage for base metal.

The door is of solid stone, and is lined on the inside with human skins, which conceal five of the keyholes. Here is a grim reminder of the daring buccaneers, long since passed away who attempted to violate the sacred Treasury of ancient England.

On the slab of the old stone altar is a circular depression in which the nation's gold and silver were melted for money. And I inspected the original dies, which are mere cylindrical seal-like pieces of iron used for impressing the silver pennies. The "tallies" or pieces of wood on which notches were cut as memoranda of payments to the King's Treasurer, are most curious relics of an illiterate age. At present the old Chapel of the Pyx contains nothing but a few ancient presses and chests. But one of these was used by no less a personage than William the Conqueror himself as a receptacle for his Royal Jewels. Here we have a true part of Edward the Confessor's building, early Norman in style. The groined



THE OLD COMMON ROOM OF THE SAXON MONKS IN THE TIME OF EDWARD THE CONFESSOR (ELEVENTH CENTURY). THE GREAT PILLARS ARE PROTECTED BY IRON RAILS, BECAUSE THE CHAMBER IS NOW THE GYMNASIUM OF THE BOYS FROM WESTMINSTER SCHOOL.

roof is supported by a massive circular pillar nearly 4 ft. in diameter, bearing rude attempts at sculpture, evidently the work of the early monks, who entered by a narrow secret passage under the Dormitory stairs.

On leaving this fascinating chamber I visited the old common-room of the Saxon monks, now used as a gymnasium



RUINS OF ABBOT LITLINGTON'S HOUSE, REACHED BY A SECRET STAIRCASE. HERE JOHN BRADSHAW, PRESIDENT OF THE TRIBUNAL THAT CONDEMNED CHARLES THE FIRST, HAD HIS STUDY, AND HIS GHOST IS STILL SAID TO HAUNT THIS LITTLE KNOWN CORNER.

by the boys of Westminster School, which was founded by Elizabeth. It is a place of low massive arches supported by great circular pillars, some of them now protected by iron rails. There are remains of an altar at the southeast corner. Close by is a low arched passage of immense antiquity leading to the Little Cloister. This was formerly used as a way by which the Kings of England entered the Abbey, either by the old Palace of Westminster or from the landing stage, when they came in their State Barge along the Thames. Just here, on the east side of the Little Cloister are the remains of St. Catherine's Chapel, which dates from 1100, and was the Chapel of the monastic infirmary. The beautiful Early English doorway still remains in the cloister, and leads to what is now the residence of the Receiver-General.

A few arches of true Norman type can be viewed from the Garden outside. In this old wall, before the ivy grew so thickly, one could see the ancient fireplace beside which the sick monks sat to hear mass. It was in St. Catherine's

Chapel that Henry III. solemnly took oath to maintain the Magna Charta, holding the Book of the Gospels in one hand and a lighted candle in the other.

Here, too, took place the struggle for precedence between the Archbishops of Canterbury and York. The account is rendered amusingly by old Fuller, the Historian. "A Synod was called at Westminster, the Pope's delegate being thereat; on whose right hand sat, as in his proper place, Richard of Canterbury; when in springs Roger of York, and finding Canterbury so seated fairly sits him down in Canterbury's lap. A baby too big to be dandled thereon; yea, Canterbury his servants dandled this lap-child with a witness who plucked him thence and buffeted him to purpose." The ruffled Archbishop of York forthwith rushed into the Abbey where the King was at service, showed his torn raiment, and demanded reparation—only to be laughed at for his pains.

In the southeast corner of the Little Cloister is a door leading through a narrow passage called the Slype into England's oldest garden. A garden has this been ever since the time of Saint Edward the Confessor, when the old monastery was built, and for more then eight centuries it has been undisturbed. The ancient convent wall still shuts it off from the roaring streets, whose noises scarce ever disturb the old-world spirit and peace of this remote spot.

Here the sick and aged monks paced the close-cut lawns and flower beds. And here too is a low squat tower, for centuries used as the King's jewel house. It contained two chapels, which gave asylum to all criminals; for the "Right of Sanctuary" was possessed by the Abbey from the earliest times. It gradually became a source of abuse, however, and after being restricted by Elizabeth it was abolished by James the First.

Just west of the Sanctuary Tower stood the old gate-house or prison of the Monastery, pulled down in 1776. Here Sir Walter Raleigh spent the night before his execution in Old Palace Yard. I also visited the ancient private chapel of the Abbot. The small Gothic windows, close to the gabled roof, opened into several quaint old rooms, some of them reached by secret stairways concealed behind the panelling. They doubtless served as hiding places for fugitives in ancient times.

I explored one of these hidden ways, which led into the southwest corner of the triforium, where John Bradshaw, President of the Tribunal that condemned Charles the First, built himself a little study, whose ruins still exist. The Deanery was let to Bradshaw in Cromwell's time; and old servants in this little-known quarter of the Abbey declare his ghost still haunts the place! This Deanery, by the way, comprises part of the old quadrangle of the Abbot's house built by Abbot Litlington in Edward the Third's day.

As one enters the venerable "Jericho Parlor" Abbot Islip's beautiful carved paneling is in front. This leads directly into the Abbot's reception room, now known as the "Jerusalem Chamber." Here Henry IV. died, thus curiously fulfilling a prediction that he would die "in Jerusalem." Here, too, the Assembly of Divines met in 1643, being driven from Henry VII.'s chapel by the cold.

It has since been the scene of many stately gatherings, including the Lying-in-State of Sir Isaac Newton, and many other famous men before their burial in the Abbey. The tables are all of old chestnut wood from the timbers of ships of the Spanish Armada, wrecked upon British coasts.

The Chamber, which measures 36 ft. x 18 ft., plays a great part in the history of our ancestors. A banquet was given in it in 1624 in honor of the marriage of tragic Charles the First; and the Revisers of the Old Testament held their sittings here to give us our Bible.

I passed out at last into Dean's Yard, through which in ancient times the stream ran which turned the Abbey mill; and you may well imagine the revulsion of feeling on emerging into the great city's clamorous streets after being steeped for hours in a mighty past.

W. G. Fitz-Gerald.

Examples of Georgian and Greek Revival Work in the Far South

No town or city in the United States can be said to blend more perfectly the old and the new than Savannah. Its broad thoroughfares, shaded by luxuriant oaks, and rolling in primitive sands are lined by the quant old houses and still possess the rare flavor of the old *régime* about them. And it can even be said of the more modern residences that in design they are free from lavishness and poppery that has characterized American domestic architecture for the last few decades; this is another way of saying that the people of Savannah as a rule have retained their refinement and taste in architecture as they have in other things, and it is the same taste and refinement that characterized their ancestors.

To realize the important part which Savannah has played in American history one has but to turn to the pages of the life of our country. In the spring of 1733 General James Oglethorpe with one hundred and twenty-one compatriots, almost all of whom were English, moved slowly up what is now the Savannah river and settled on a spot 15 or 16 miles from the sea, which is the present site of the city—a place where the little band of persecuted debtors could prove that poverty was no disgrace. Their leader was led to this enterprise purely by philanthropic motives and was indeed somewhat of a dreamer, judging from the spirit of his prophecy, for, according to the biographer Wright, he "depicted a populous city with large squares for markets and other public purposes in every quarter, wide, regular streets, crossing each other at right angles and shaded by rows of noble trees. The forty rough wooden houses, the best of which served as a place of worship and a school for the children, would give way to stately abodes, and above the foliage would rise the towers and domes of many churches." Gen. Oglethorpe's settlement grew rapidly and in 1775 it is known to have been a fashionable English town.

It is hard to overlook the part that Savannah took in the Revolutionary War, and the distinguished soldiers it contributed to the cause of independence. Savannah was the home of Gen. Greene, second in command to Gen. Washington, in the first army of the country, his residence, "Mulberry Grove," a few miles from the city, is still standing and is quite interesting as a relic of Revolutionary times. Another hero of Savannah whose name is familiar to all Americans is Sergt. William Jasper, whose heroic acts in the battle of Fort Moultrie in Savannah harbor were feats of daring seldom eclipsed.

This old town also claims the honor of being the home of Capt. Tatnall, who after fighting in the war of 1812 and the War of Mexico, enlisted with the British at the capture of Hong Kong and in this campaign gave vent to that epigrammatic phrase that "Blood is thicker than water"; it was also he who commanded the *Merrimac* in the Civil War from her first victory to her defeat at the hands of the *Monitor*.

Savannah lies on the low banks of the Savannah river amid a vegetation that is almost tropical in nature. It is a place which in every sense is possessed of what is known as "local color." The low level fields of the Savannah district, familiarly known as the "savannahs," are resplendent in their luxuriant vegetation and the spiked palmetto, the stately Spanish daggers with its bell-like blossoms, the gray moss-covered live oaks—all contribute to the setting which is indeed an ideal one for these stately old houses of Savannah.

Unlike Charleston, which is about 100 miles to the north, we find here in Savannah few houses which are really Georgian. To the student this is somewhat of a disappointment considering the date of settlement of this city. This point, however, can be explained by the occurrence of two fires, the first in 1796, which is known to have destroyed 229 houses, the

second fire in 1820 made victims of 463 structures; it is also explained by the fact that the class of emigrants who settled this town, while they were of good birth, were not moneyed people and as has been said, they were men whose debts were their crimes; the houses such men could build would not be pretentious nor apt to be of the most substantial construction.

While we find many points in Savannah that suggest Charleston, the streets in particular were named for Charleston men; for instance, Bull Street was named to commemorate Colonel William Bull, Drayton Street was named for Thomas Drayton of Charleston, and Saint Julian Street for James St. Julian, a friend of the early colonists; still with these and many other similarities the houses in Savannah in no way suggest those of the neighboring city.

Strange to say we do not find houses in Savannah of the San Domingan sort, the many-storied portico extending the full length of the house and its entrance at the side, turning (like many English houses) its plain front to the street and the public, and reserving the real front for the high-walled garden.

Perhaps the oldest building of the city which survived to a recent date was the City Exchange, built in 1799, and was only a few months ago torn down to give place to a more adequate structure. The old bulding has served a great variety of purposes, sometimes for a ball, again for a place of gathering on patriotic occasions, and at the same time fulfilled its commercial purposes.



THE McALPIN HOUSE (1820-22), SAVANNAH, GA.

The building is distinctively Georgian in its architecture, and while it is of great size, can hardly be called a success from the standpoint of design. Another house which is Georgian is the Gilmer house (now used for busi-



THE OLD CITY EXCHANGE (1797).

Savannah, Ga.

ness) at the corner of Bull and State Streets. The design of the house suggests the Colonial city-built house of the Northern cities, simple in design and with its covering of vines, retains a peculiar charm. The brick used in this house is native burned and of dark brown color laid up in thick white mortar joints.

The McAlpin house on Orleans Square is one of the best examples of the pseudo-Georgian houses in Savannah; its front portico, the main feature of the house, is undoubtedly Georgian, but English and not Georgian as it is practiced in America. The order used for the columns is that of the Tower of the Winds at Athens and is a very successful adaptation. The third story was added at a later date and is something to be deplored; however, its front has a peculiar charm about it and is in character, sombre and dignified. This house is very similar to the "Hermitage," six miles out of Savannah on the river and was the summer home of the McAlpin family. These two houses are also similar to the "Hermitage" house of Andrew Jackson at Nashville, Tenn., and also to the home of James K. Polk at Nashville. The house is of brick and as are many others in Savannah the brick being brought from England.

The four houses in Savannah which attract one most are those built by the English architect Jay, who seems to have had a large clientage in the early part of the last century. The existing examples of his work are the Scarborough, the Owens, the Bullock and the Telfair houses, all built between 1815 and 1822. In considering these houses it is hard to classify them as to style; they suggest the English Georgian strongly, which is only natural since their builder was an Englishman. Again we see evidences of the Italian Renaissance in its earlier development; this is particularly noticeable in the Telfair house, its division of stories by cornices and the low plastered third story, and again with these two influences shown so strongly we can see evidences which show plainly that these four houses are but the forerunners of the classic revival which only a few years later was to deluge the South with its charming white pillared structures which with all their errors in detail, some may sneer at yet cannot fail to be interested by.



TELFAIR ACADEMY, SAVANNAH, GA.

While these houses built by Jay are not



THE GILMER HOUSE.

Bull and State Streets, Savannah, Ga.

of the big two-story portico variety, features generally considered so Southern, yet they are perfectly adapted to the warm climate by their large rooms and spacious halls giving the free ventilation so much needed in this climate. They are houses well adapted for lavish entertainment, for each one has its banquet hall and its ballroom. The kitchen and pantries, as in all old houses of the South, were in separate little buildings to the rear, for the odors and heat of the culinary department were not to be tolerated, no matter how far the food had to be brought or how much trouble it was to the servants, for servants were plentiful and good in those days.

The earliest work of Jay's that is standing to-day is perhaps the Owens house built in 1815, and built of a strange material called "tabby," a species of concrete or artificial stone composed principally of crushed seashells. The entrance to this house is its most interesting feature and is indeed a clever scheme. The capitals of the Ionic order used in the portico are those which are found so often in the Black Belt of Alabama, and give us a clue that perhaps many of the Alabama builders were immigrants from Savannah. The features about the house which suggest most strongly the Georgian are the pilasters of the second story and the recessed windows. The Telfair residence now forming the principal part of the Telfair Art Academy was originally the home of its builder, Edward Telfair, a governor of Georgia in the latter part of the 17th century. It was bequeathed to its present purpose in 1876 by Miss Mary Telfair, a descendant of its original owner, and with pecuniary aid was remodeled slightly and had additions made to the rear. The building has more of the Renaissance in its design than any of the other Savannah houses. Really it seems to be an Italian house transplanted to American soil. It is built of brick and like the Scarborough and Bullock houses the brick is reputed to have been brought from England. The Scarborough house on Broad Street is very similar to the Telfair residence in that the stories are marked by the cornices and it is of the same square shape, the portico much the same except that the Doric order is used instead of the Corinthian, and like all Jay houses the wall surfaces are smooth and unbroken. The building is now in the rough part of the town and is utilized as a negro school. Humiliating it must seem for these walls which sheltered the galaxy of Savannah beauties of the old *régime* and their gallant beaux to have descended from their high estate and just position to that of housing the numerous blacks of the neighborhood. Orleans Square must indeed have been the center of fashion during the antebellum days of Savannah, for besides the McAlpin and Minus houses we find there the Bullock house, surrounded by its high wrought-iron grille and its front yard entered through the massive gateways. Both the plan and exterior of the house are to be commended. Here Jay, the fashionable architect of the day, seems to have excelled himself; the semi-circular portico and the spiral stairway in the front hall are the most interesting parts of the building. The circular bedroom in the rear part of the main floor is a new departure for the houses of that time. Like the Scarborough house this charming old residence can only claim that its glory is of the past, for as seen on the photo it is for sale and for sale *cheap*. The house is known at the present day in Savannah as Habersham House as the family of this name have owned and resided there since the 30's. For the future one can only hope that its occupant will appreciate its charms and will honor its traditions.

The dense and brilliant foliage about the Savannah houses it is that gives them their peculiar charm; the bright sunlight and the deep blue shadows on the white wall surfaces need only such a setting to give the *ensembles* which we find here. Perhaps the most charming mass of foliage to be found anywhere is that in Bonaventura Cemetery. The live oaks with their gray Spanish moss, the palmetto and other plants of the tropical countries have grown with utter abandon and among them can be seen the many old brick and stone tombs of this city of the dead.

In studying Savannah houses one can-

not fail to be pleased with the wrought-iron work used so freely as grille fences, balustrades and gates. In almost every case it is of good design and used in such a way as to express the qualities of the material. The best pieces of iron-work are the lamp standards of the Owens house entrance and the gateways and grille fence of the Bullock place.

One is surprised not to find here in Savannah the big columned portico as we find it in other parts of the South, but when we consider that these houses in almost every case were the winter homes of their owners and that during the summer the planter with his family resided on the plantation, which was, as a rule, not built so substantially. The latter was large, spacious and usually built of wood, and in these summer homes are found the large porticoes. In the surrounding country about Savannah are found many of these old homes, but in the richest lands to the south we find a region which possesses few examples of this good work and in its stead a class of carpenter-designed houses. This region of rich land extending as far south as Brunswick and up and along the Alta Maha river comprised in the early days the best rice lands of the State and were well stocked with game of every description—duck, trukey, snipe and woodcock—a veritable hunter's paradise.

J. Robie Kennedy, Jr.



Granite Statue of Alexander Hamilton in Commonwealth Avenue, Boston.

Dr. William Rimmer, Sculptor.



THE McALPIN HOUSE—PORTICO.

Orleans Square, Savannah, Ga.



Savannah, Ga. THE McALPIN HOUSE—HALL.



THE BULLOCK HOUSE—PORTICO.

Orleans Square, Savannah, Ga. Jay, Architect.



THE BULLOCK HOUSE—STAIRWAY.

Orleans Square, Savannah, Ga. Jay, Architect.



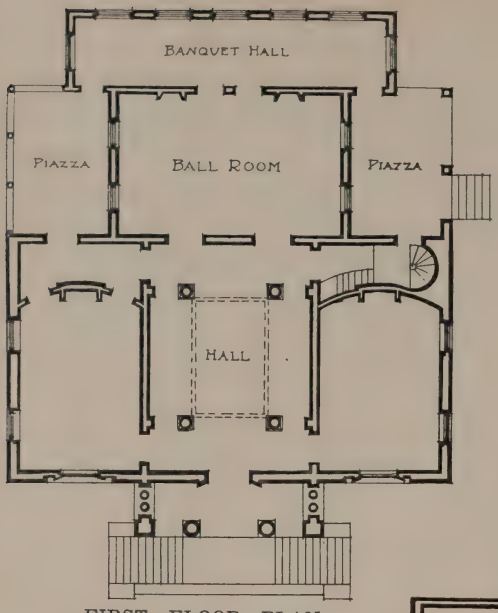
THE BULLOCK HOUSE (1817). Jay, Architect.

Orleans Square, Savannah, Ga

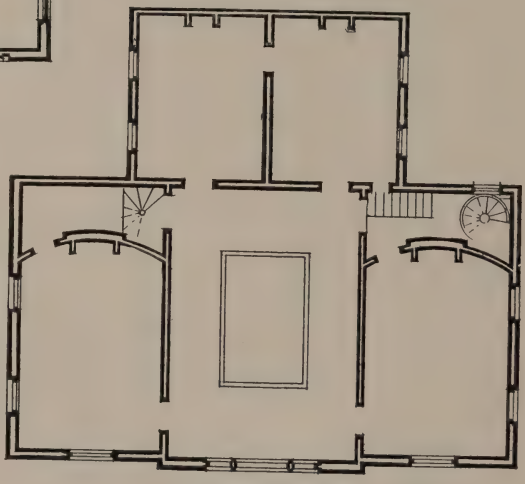


THE OWENS HOUSE (1815).

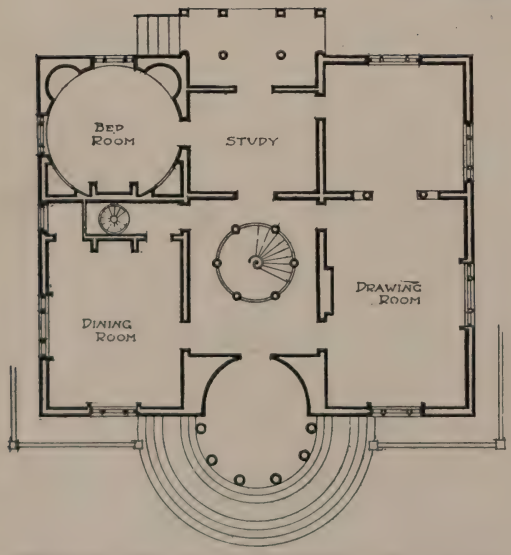
Savannah, Ga. Jay, Architect.



FIRST FLOOR PLAN
THE SCARBOROUGH HOUSE (1815.)
Broad Street, Savannah, Ga.
Jay, Architect.



SECOND FLOOR PLAN OF THE SCARBOROUGH HOUSE.



FIRST FLOOR PLAN—THE BULLOCK HOUSE.
Orleans Square, Savannah, Ga.

NOTES & COMMENTS

TWO RIDING ACADEMIES.

The Architectural Record presents herewith photographs of two riding academies belonging to different members of the Vanderbilt family. Now that well-to-do people spend a large part of the winter, as well as much of the summer, in the country, the practice of adding riding academies to the other buildings connected with large estates is becoming more and more common, and it may be expected that during the next ten years the architects of such estates will have many buildings of this class to design. They can, undoubtedly, be made useful in more ways than one. They not only provide a means of exercising and training horses in snowy and disagreeable weather, which is of some importance to gentlemen owning horses that are entered in the annual shows, but it is possible also to use the buildings for other purposes. They could, for instance, be used at times for indoor tennis courts; and it is probable that before long some rich man will carry out the idea of including within one large structure a combination of casino and riding academy, which would contain the means of enjoying all sorts of indoor games and sports, such as riding and driving in the ring, squash and tennis courts, billiards, bowling and a pool.



RIDING ACADEMY OF MR. ALFRED G. VANDERBILT, OAKLAND FARM.
Portsmouth, R. I. Ewing & Chappell, Architects.

The two buildings illustrated herewith are, however, nothing more than enclosures for riding and driving rings. They apparent-

ly contain stalls also for a large number of horses, together with facilities for the convenient feeding of the animals. They are, consequently, temporary stables as well as riding academies, and this fact diminishes their availability for anything but their primary purpose. They consist simply of steel structures covering a very large enclosure, inclosed by wooden walls and roofs. They are, from the architectural point of view, nothing more or less than large barns, the only difference being that there has been an attempt to make them look like buildings devoted to a purpose of entertainment rather than strict utilitarian structures. They are embellished consequently with formal entrances, and very simple devices have been used to give them an attractive appearance associated with the tradition of the Colonial barn buildings. It cannot be said, indeed, that their architects have done anything more than scratch the surface of the architectural problem and opportunity they present, but as long as the architects were confined to a wooden enclosure of the steel structure they were, of course, unable to give the building any architectural dignity.

Of the two the riding academy of Mr. A. G. Vanderbilt is both more pretentious and more attractive. It really presents, from the neighboring pond, a very entertaining and picturesque appearance. The large span of the hipped roof is very well held together by the towers on the corners, and the emphatic lines of the entrance porch. The big window does not look particularly well, but its bigness was necessary for the purpose of properly lighting the riding academy. Inasmuch as the building would be used on dark winter days more than at any other time, the necessity of obtaining as much light as possible for the ring was of dominant importance; and this problem has received a more complete although a more expensive solution in Mr. A. G. Vanderbilt's building than in that of Mr. R. C. Vanderbilt. The former's arena is lighted not only by large windows at either end and by skylights, but also by windows which break through the roof and appear on the outside as dormers. Mr. R. C. Vanderbilt's academy, on the other hand, while it has windows on the side walls above the stalls, is not so well lighted because the situation of these windows is lower and does not diffuse as much light as the higher windows on the sides of the other building. A comparison of the appearance of the two arenas, as shown in photographs taken on days of full summer sunshine, shows that the light in Mr. A. G. Vanderbilt's arena is more evenly distributed over the whole area. But Mr. R. C. Vanderbilt's academy, while less picturesque and not so well lighted, has the advantage in certain respects. Its plain, simple lines and its smaller openings look very well from the outside, and are more suggestive of the simplicity of the farm buildings from which these academies are architecturally descended. Altogether, the two brothers can congratulate themselves on the attractive simplicity and propriety of their academies, al-



RIDING ACADEMY OF MR. ALFRED G. VANDERBILT, OAKLAND FARM.
Portsmouth, R. I. Ewing & Chappell, Architects.

though it is to be hoped that the next buildings of this class to be erected will be enclosed by a material which will enable the architect to give the structure a dignity commensurate with their size and the area they cover.

BUILDING FOR ONE GENERATION.

The Egyptians built for all time. The Romans built for a thousand years. The best of Mediaeval and Renaissance buildings were supposed to stand at least for a few centuries. But American architects do not apparently build for more than one generation. The whole American system of business is devoted to the demonstration of the truth that machinery of all kinds, whether made of brick and stone or of steel, is economical only when it is impermanent; and the consequence is that in many cases the buildings of which one generation is most proud are thrown by the next generation into the scrap-heap.

New York City offers the most numerous and the most striking illustrations of this process. The first sky-scrapers were erected in that city less than twenty years ago, and these buildings are already being superseded. The height of the Tribune building has been doubled. Several eight and ten-story buildings on lower Broadway and Wall street have either been destroyed or else made to carry many additional floors. The Times building, the first steel structure erected in that city and now standing scarcely fifteen years is already threatened with destruction. In certain important districts twelve-story buildings have become conspicuous for their diminutive size, and the sky-scrapers most recently planned all run up into the air from twenty to fifty stories. When buildings of such a height become economic possibilities, there is, of course, no telling how far the process of displacement and reconstruction may go, and if the municipality does not find some reason to interfere it may be expected that within the next generation almost every block, well situated in one of the several business districts, will be partly occupied by a forty or fifty-story tower. The same conditions prevail in those parts of the city which are devoted to residences. The old dwellings on Fifth avenue seemed to our forbears substantial and permanent structures, but the Stewart mansion, on the corner of 34th St., which only a generation ago was the pride of the city has been pulled down and almost forgotten, while further north rich New Yorkers are possessed by a passion for destroying the old brownstone dwellings, substituting for them higher, better planned and more expensive residences. It will not be so very long before the brownstone residence, once the typical New York habitation, will become as much of a rarity as are now the old three-story dwellings with low stoops and dormer windows.

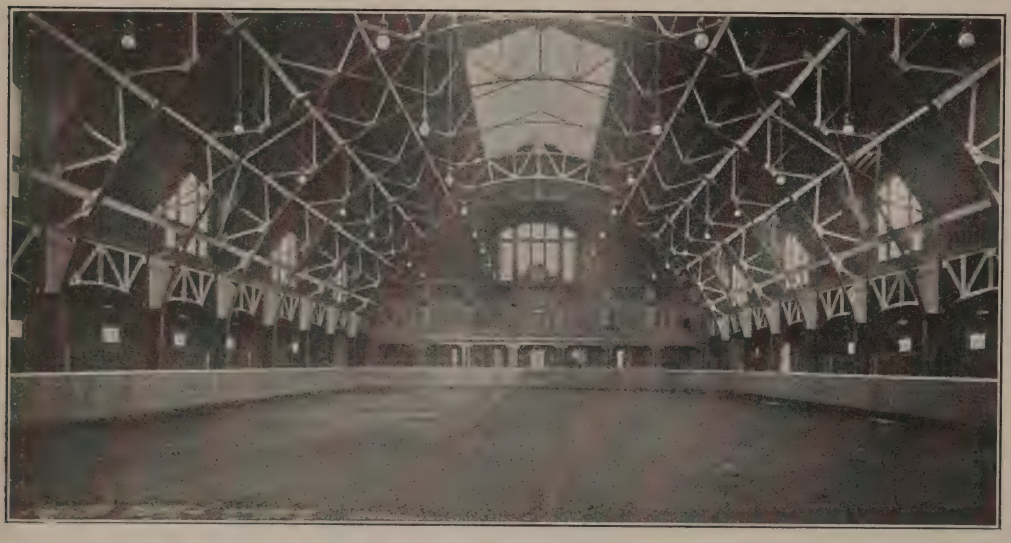
This impermanence of American building,



RIDING ACADEMY OF MR. ALFRED G. VANDERBILT—SANDY POINT FARM.
Portsmouth, R. I. Ewing & Chappell, Architects.

while it gives the American architect an unprecedented amount of work, also makes his fame a fleeting and precarious thing. The beauty of a building is no barrier to its destruction. It is true that the houses, which we are in the habit of destroying are not beautiful, but if they were it would make little difference, because they do not last long enough to have their beauty confirmed by association and reverence. In the case of only a few public buildings, such as Independence Hall in Philadelphia or the City Hall in New York, does public opinion demand their preservation. Doubtless in the course of time a similar selection will be made among the most beautiful buildings erected by the present generation, but unless the nature of the American economic system undergoes a radical change, it looks very much as if the American architect of to-day could not count with any more certainty upon the perpetuity of the visible presence of his buildings than could his innocent predecessors of 1870. The rage for destruction and reconstruction is waxing rather than waning.

A recent announcement affords a flagrant illustration of this fact. By common consent the late Richard Morris Hunt was the leader among the first generation of new American architects. Both by the character of his training and of his work, he summed up the conflicting motives and the eclectic sources of the transitional design of his day; and he is bound to occupy an honorable and permanent place in the history of American architecture. His admirers, when they came, erected a monument to his memory, gave it a place on the east wall of Central Park, between 70th and 71st Sts., facing what was believed to be one of the best and most permanent of his buildings, the Lenox Library. There seemed to be no reason to blieve that the Lenox Library would not be perhaps the most enduring embodiment of his architectural skill that was to be found in New York City. But what is the result. About thirty years after the library was built, and only five years after the erection of the memorial, it is announced that the site of the library has been sold to a Pittsburg millionaire and that the building will be torn down and replaced with a "palatial" residence. The bust of Mr. Hunt will within a few years gaze fixedly at a building erected by another architect, and when that architect is designing the new building he may well divest himself of professional pride and ask himself whether the vanity of his own edifice may not be as quickly demonstrated. American architecture, because of its impermanence and its pre-occupation with appearances, has frequently been described as at bottom merely a scenic background for the incongruous melodrama of American life; but an instance such as this tempts one to push the analogy somewhat further. The fame of the painter, the sculptor or the architect has always had the unperishable witness of his works, but will not



INTERIOR OF RIDING ACADEMY OF MR. ALFRED G. VANDERBILT—OAKLAND FARM. Portsmouth, R. I.
Ewing & Chappell, Architects.

the fame of the American architect like that of an actor be preserved only by tradition or by written memorials? A hundred years from now, may it not be that the habitation of the reputation which an American architect leaves behind him, will not consist in stone and steel buildings, but in the dim and moth-eaten pages of some Architectural Record?

Is there any assurance that the expensive buildings which are being erected to-day will prove to be any more permanent than those which were erected by the last generation? The question is difficult to answer. The sky-scrapers, twenty or more stories high, so many of which are being run up in the business districts of our large cities look as if they could never be superseded for business reasons alone. Conceivably it might pay to tear down a twenty-story building, in order to substitute a fifty-story building, but obviously forty or fifty-story buildings are not going to prevail. They are profitable only as a tower where light is secured by the ownership of immediately surrounding property; and even if it were possible to erect a profitable building forty stories high covering a whole block, local regulations would probably forbid private owners from monopolizing in this way the light and the air which ought to reach the street level. Thus it is difficult to believe that property owners will tear down buildings over sixteen stories high for business reasons, and the only doubt which one can legitimately feel about the matter would arise simply from the impossibility in general of anticipating what in this respect the future has in store for us. Our forbears would have been incredulous, in case any one had told them that some day the demolition of ten-story buildings would be a profitable operation in certain parts of New York City. By the end of twenty-five years a population of over 10,000,000 will be inhabiting the neighborhood of New York; and if the same rate of increase is maintained the year 1950 will see about 16,000,000 or 17,000,000 people gathered around the same center. No one can tell what the economic necessities of such a population may demand. On the whole, however, it seems probable that if the architects of the sky-scrapers are proud of their handiwork, the occasion of their pride will last for as much as one or two generations. Their buildings may well survive for fifty years or more; and the matter about which their architects may be chiefly solicitous is the amount and character of the fame which will survive with the buildings.

So far, however, as all the lower structures now being erected in our large cities are concerned, it is doubtful whether their life will run for a longer period than those erected during the last generation. The economic conditions which warranted the destruction of the Stewart mansion and the Boreel building are likely in the course of time to visit a



RIDING ACADEMY OF MR. REGINALD C. VANDERBILT—SANDY POINT FARM.
Portsmouth, R. I. Stewart Walker, Architect.

similar fate upon the Vanderbilt houses, further visit the University Club, and even the Frick mansion, which will arise in place of the Lenox Library. Just how the 16,000,000 inhabitants of New York City in 1950 will live, we do not know; but the transaction of their business affairs is likely to require almost all the space now devoted to residential purposes. Indeed, it may be safely asserted that the American architect of domestic buildings has with some few exceptions the least cause of all to be satisfied with the outlook for the perpetuation of his

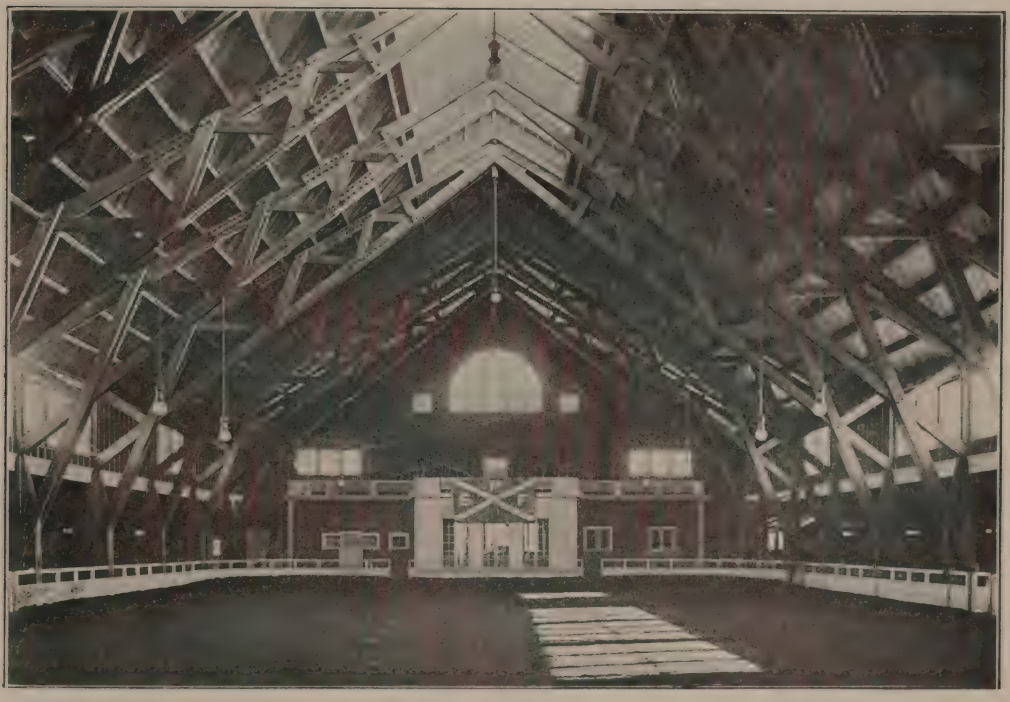


RIDING ACADEMY OF MR. REGINALD C. VANDERBILT—SANDY POINT FARM.
Portsmouth, R. I. Stewart Walker, Architect.

buildings. In the cities the contemporary American residence will be superseded during the course of the next generation or two, while so far as country houses are concerned, it looks as if the changes in social conditions and aesthetic standards might be equally destructive in their result. American society is still in a blind condition. The house that one generation builds the next generation looks upon with impatience and possibly with contempt. Our residences, that is, are as a rule being erected for individuals, and the sons and daughters of these individuals may well want something entirely different. The domestic architecture of to-day has no permanent social condition, and no popular aesthetic standards behind it. The next generation will in the satisfaction of its needs and standards either neglect or transform most of the expensive houses which are being built to-day. Just as a city like New York can afford the apparent extravagance of throwing ten-story buildings into the scrap-heap, so the inheritors of the great contemporary fortunes will be in a position to throw away the expensive houses bequeathed to them and to build the kind of houses that they want. The large country residences of to-day will not be destroyed, but they are likely to be radically changed, and may in some cases be turned into country clubs and charitable institutions.

Of course, there will be exceptions. There are some houses now being erected which are really beautiful, and will arouse in the generations to come the same feelings of reverence which are aroused by some few of our earlier Colonial dwellings. The architects of these houses can count with certainty upon the perpetuity not only of their reputation, but of the buildings on which

their reputation is based. For a really beautiful building will not be radically altered unless it falls into the hands of barbarians; and the Americans of the next few generations are likely to be over rather than under-civilized. Such buildings are likely either to be cherished by the descendants of their builders or to fall into the hands of people who will cherish them. It is in country houses of this kind—houses which embody a permanent aesthetic value—that constitutes the American architect's best chance of earning an enduring fame. His sky-scrapers may survive; but they will do him little credit. His public buildings may survive; but the names of their architects will not be remembered with admiration and gratitude. Their urban residences will almost certainly be destroyed. Their country residences will either be destroyed or transformed beyond recognition, so far as they appeal entirely to architectural fashions or individual peculiarities; but in the few instances in which their present acceptability is due to a fundamental propriety of plan and form, they will afford the American architect of to-day at least one opportunity of giving his fame a fair and enduring habitation.



INTERIOR OF RIDING ACADEMY OF MR. REGINALD C. VANDERBILT—SANDY POINT FARM.

Portsmouth, R. I. Stewart Walker, Architect.

A CHILDREN'S BLOCK.

An interesting plan has developed in connection with the new Juvenile Court and Detention Home which is now being erected in Chicago. The structure has only 109 feet frontage, but there is already a public school with a good playground on the east end of the block, and the suggestion is made that the whole block be acquired and made "the children's block." It is situated only one square south of Hull House, across Halsted street, in a region where such a development would be very welcome. The Juvenile Court site is at the northwest end facing north. The present school and its playground take up something more than a third of the block on the east. Between these and the Juvenile Court and Home it is proposed to place a small playground and school building for children temporarily detained; and back of these, and occupying the southern part of the block and the re-

maining third of the block's area, to establish a little park, which shall have sand piles and a wading pool as well as vegetation. Jane Addams and Mrs. Emmons Blaine are among those interested in the project, which is novel and has much to commend it from various points of view. To create a children's center is something like as interesting and worth while as to create a civic center.

DISCUSSION OF BUILDING HEIGHTS.

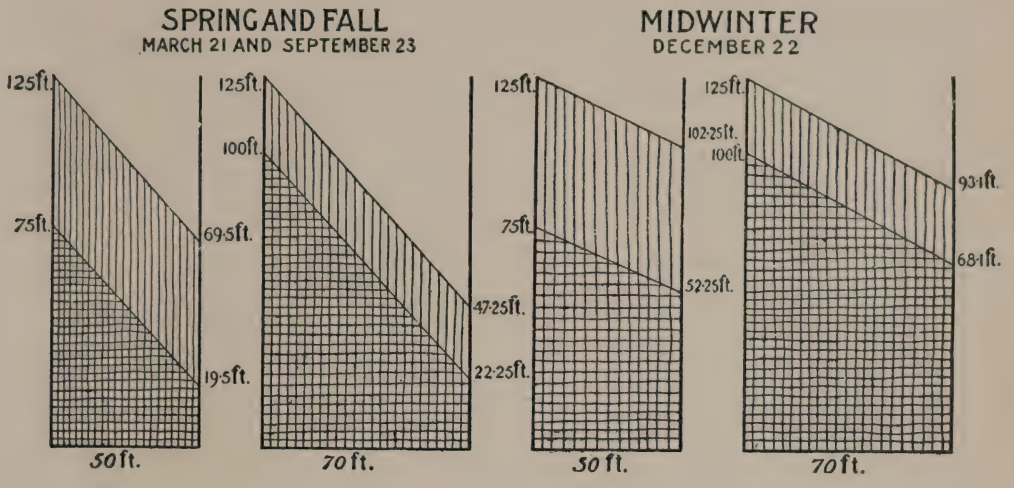
The determined fight in Springfield, Mass., recently for better building regulations, and especially for an ordinance to establish a conservative height limit, resulted in unusually instructive hearings. The discussion dragged through several months, but with seemingly no waning of interest on the part of the citizens. It was argued that to impose building regulations was not an act of conservatism but of progressiveness, for as civilization becomes more complex the principle that one may not use his own in such way as to injure another's, is receiving constantly wider application in the equity courts. Apropos of this, a speaker declared the promiscuous raising of apartment houses on residential streets as "analagous to predatory wealth." Samuel Bowles called attention to diagrams showing the shadows cast in Sprinfield at 9 A. M. and 3 P. M. in the spring, fall and winter on streets running north and south, and at noon on streets running east and west, by buildings that were built to the maximum (125 feet) allowed under the existing law. The diagrams showed that the sunlight could not reach the pavement of an ordinary street during any part of the day. A letter from Prof. W. T. Sedgwick, of Boston, presented various sanitary objections to skyscrapers, mentioning among others the enormous consumption of oxygen caused by the combustion of vast heating apparatuses, and the respiration of a congestion of people. He also noted an important, but too little considered, economic argument, saying, "It seems to me also that the economic justice and fairness of a horizontal, rather than a vertical, extension of prosperity, in which large numbers of citizens might share, is one of very great importance; but this aspect of the subject property owners not in the immediate heart of cities will, if they are wise, themselves jealously look after." A letter from Nathan Matthews, a member of the Boston building height commission and a former mayor, testified that if there had not been already so many buildings 125 feet high in the business part of Boston, the commission would have fixed 100 feet as the limit. He adds that his investigation of the effect on land values of such restriction (which the commission actually did impose on parts of the Back Bay) shows it to have been beneficial rather than injurious. Henry Parkman, another member of the commission, stated his belief that if the question were to-day a new one in Boston, and no buildings of 125 feet had been already erected, a general application of a 100-foot limit would be acceptable, as giving the greatest good to the greatest number. Various physicians testified as to the hygienic effect of high buildings, and Guy Kirkham, the architect, is quoted as declaring uneveness of sky-line "a mark of savagery." The ordinance proposed heights limited to one and one-half times the width of the street upon which the building is situated, with a maximum limit of 100 feet in the business district and 80 feet in the residential. Within the limits, however, the space between street and building could be added to the street width for purposes of computation where a structure was set back; and upper stories could be added to a structure if for them there were four feet of set-back for each increase of five feet in height. Steeples, domes, cupolas, chimneys, etc., were not included in the stated limits. After all the arguments and many hearings, the common council failed to approve the suggested restrictions.

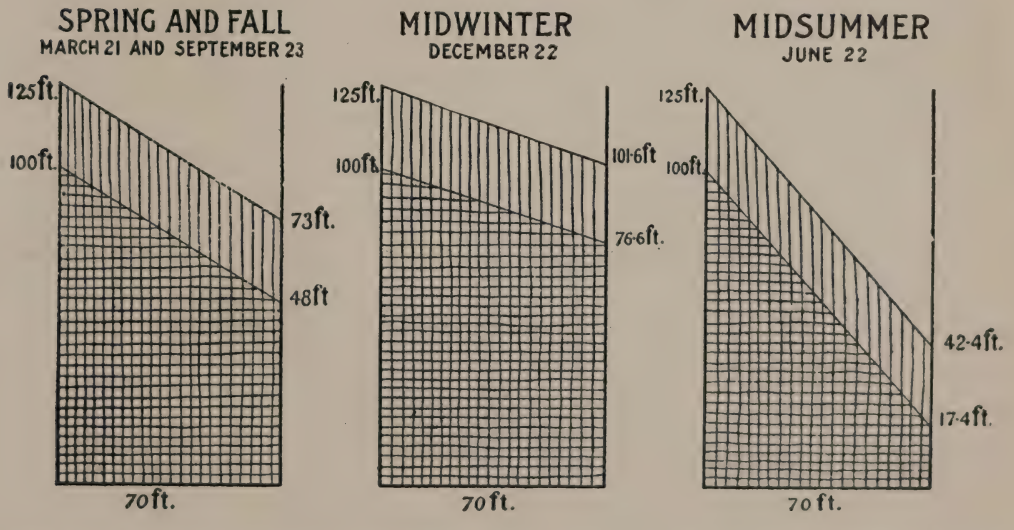
CIVIC CENTER FOR SPRINGFIELD.

It is clear that Springfield, Mass., long in a class by itself in the exhibition of civic spirit, has been this winter one of the most active and interesting centers of improvement zeal. On top of the stirring report on the riverfront reclamation, and the building regulations hearings, came the report of Daniel J. Marsh, the chairman of the Park Commission, giving the plans of Peabody & Stearns for the development of Court Square; and on the heels of that there has been made at a mass meeting the announcement that Everett H. Barney would leave his estate, valued at more than a million dollars, to the city for its beautification and improvement. The expectation is that this money will be put to the development of the riverfront scheme. The Peabody & Stearns suggestions for Court Square, prepared at the request of the committee, represent more than a year and a half of study and take as

THE EFFECT OF HIGH BUILDINGS IN OBSTRUCTING LIGHT IN STREETS RUNNING EAST AND WEST.

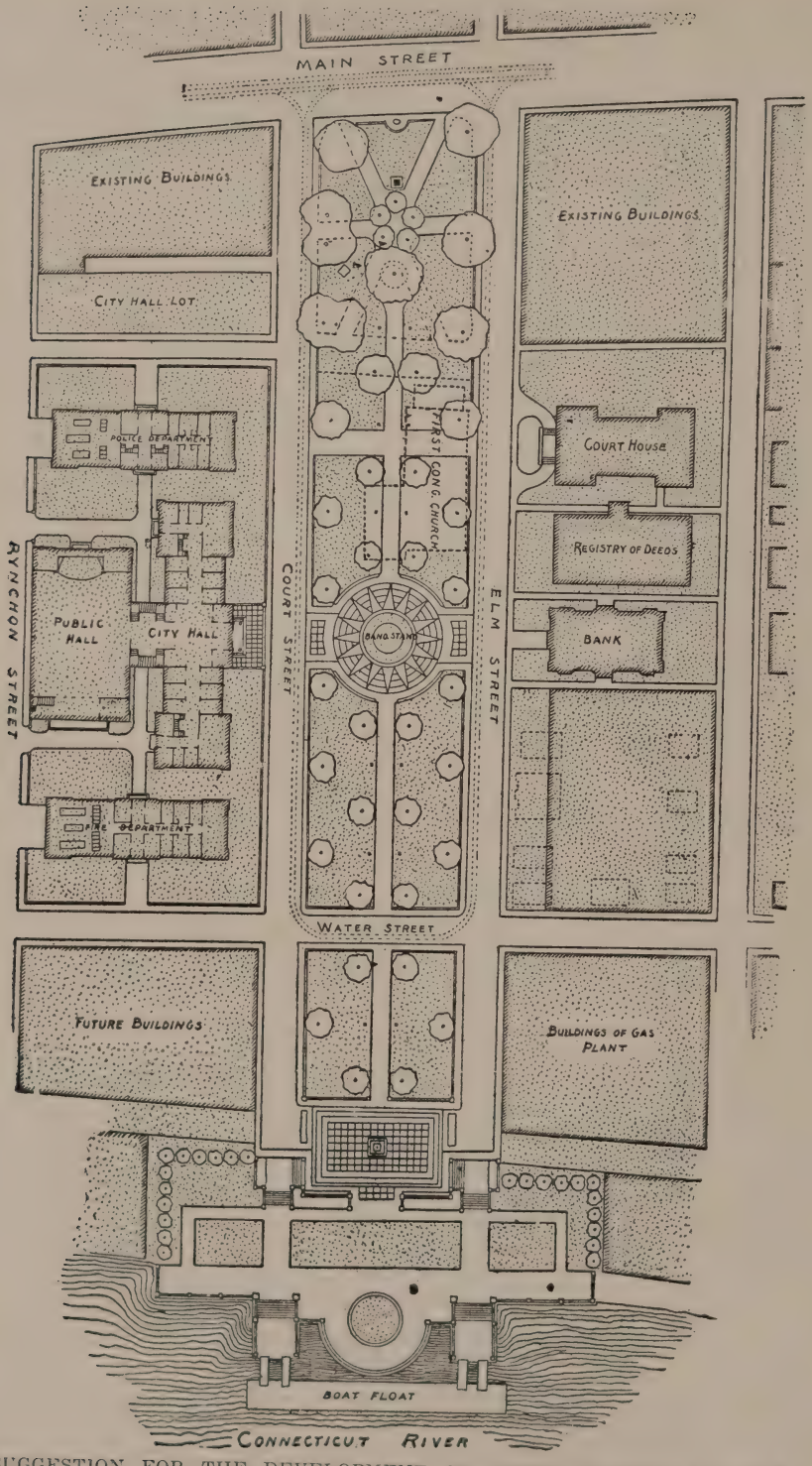
[One of the streets is shown as of a width of 50 feet, the other of 70 feet, and the shadows are illustrated as they would be cast at noon. The business part of State street, Springfield, east of Main, is 68 feet wide. State street, west of Main, and most of the east and west streets in the business section, are approximately 50 feet wide. The present Massachusetts law limits the height of buildings to 125 feet on streets of any width. Under the proposed law for Springfield the limit of height for any building on a street 50 feet wide would be 75 feet, or 1½ times the width of the street. On a street 68 or 70 feet wide the limit would be 100 feet.]





THE EFFECT OF HIGH BUILDINGS IN OBSTRUCTING LIGHT IN STREETS RUNNING NORTH AND SOUTH.

[The streets are shown as of a width of 70 feet, which is very nearly the width of Main street, Springfield. The shadows are shown as they would be cast at 9 a. m. and 3 p. m. The present Massachusetts law limits the height of buildings to 125 feet. The proposed law for Springfield would limit the height of buildings on a street 70 feet wide to 100 feet.]



SUGGESTION FOR THE DEVELOPMENT OF COURT SQUARE AND THE MUNICIPAL BUILDINGS.

Springfield, Mass. Peabody & Stearns, Architects.

their motif the creation of a civic center. The plan proposes that the city buy the land on the north side of the square from the present police building to the river. It is thought this would cost about $230,000. This expenditure would be reduced by fully $50,000 by the sale of the old city hall site, and it is suggested that the First Church, dispossessed by the city in carrying out the project, could be profitably offered this location. On the land thus secured, it is proposed that there be erected the new city hall, flanked on either side by the police and fire department buildings, and balancing across the square the present court house, hall of records and bank. Through the center of the square, extended from Main street to the river by the removal of the church, would be laid a mall, with two rows of elms on either side. Midway down the mall, and on the axis of city hall and bank, would be a circular plaza with a bandstand. The river terminus of the mall would be an esplanade, with balustraded outlook over the river surmounting the retaining wall. Steps on each side descend to a "terrace" at a lower level, whence gangways lead to a landing stage. A single street railway track encompasses the square.

SAN FRANCISCO AND THE BURNHAM PLAN.

It is officially announced by the Merchants' Association of San Francisco that the directors have made formal request to the Committee of Forty "to take up again and carry to completion the work of plotting the city and preparing estimates of cost preliminary to a beginning on the execution of the Burnham plan." The association declares its intention to do its part toward securing such realization as is practicable of the great improvement scheme. To this end the directors have appointed a committee of three, at the head of which is Dr. Hartland Law, to see that a beginning is made in harmony with the general project. The directors add that while they appreciate that only "a small part of the project can be realized at present, the board feels that nothing should be done by the city that will



THE DRIVE TO MR. W. B. DINSMORE'S HOUSE.
Tuxedo Park, N. Y. Donn Barber, Architect.

prove an obstacle to the completed work." In this connection, it may be said that of the limited and handsome edition of the Burnham Report, which was issued by the city on the eve of the earthquake, a great portion has doubtless been destroyed. The book, which an outsider could hardly hope to get at the start, is now much rarer. The few who are lucky enough to have it, have something that is valuable in more ways than one. For the benefit of others, it may be stated that the Report, with its illustrations, was reprinted in two parts in the November and December numbers of the "New San Francisco Magazine," and is thus procurable.



MR. W. B. DINSMORE'S HOUSE.

Tuxedo Park, N. Y. Donn Barber, Architect.

AMERICAN ARCHITECTURE.

Of a lecture on "Present Tendencies of American Architecture," by Prof. A. D. F. Hamlin, a synopsis gives the following summary: "An eclecticism which seems to be working definitely toward the close association of certain types and kinds of buildings with particular historic style forms, is perhaps the most conspicuous and notable tendency of our modern American architecture. Our churches, for example, are mostly Gothic or Romanesque—more often the former; our state capitols and libraries are Classic or of the severer Renaissance types of design. There is a strong tendency toward the English collegiate Gothic for academic and university buildings, and toward Roman forms in our domed state capitols and our more monumental government buildings. We may note in the second place a tendency toward improved and more solid and durable construction, with great ingenuity in adapting new means to new ends. Thirdly, our modern work is characterized by indifference to tradition and arbitrary rules of design, not because of ignorance, as was the case generally twenty or thirty years ago, but because of a spirit of inborn artistic independence. Fourthly, a general tendency toward increased respect for monumental considerations, for the proper placing of buildings and for their proper relation to their environment; for civic grouping and what is broadly called municipal improvement. And, finally, there is in our modern architecture a tendency toward overdecoration, or at least toward an undue regard for decoration as compared with composition and proportion." These tendencies do not, the speaker added, point to a "new and national style," in the sense of establishing a definite set of forms and details to be used alike for all classes of buildings. Uniformity and fixity, in this age and country, are not to be clamored for in architecture. Ours is varied, daring and changing because it is trying to meet American requirements. The lecture was a long one, taking an hour and a half of rapid reading to deliver; but it was full of interesting thought. Its conclusion, that there is a recognizable American architecture, with the speaker's rapid sketch of its characteristics—as summarized above—offers record on a much discussed point.

PROGRESS IN DENVER

Civic improvement progress in Denver has been rapid during the last year, following the official report on the possibilities for such improvement. A city forester and smoke inspector were almost at once appointed, in accordance with the recommendations. One public comfort station has been completed and for another the plans are ready. From the principal retail business street, Sixteenth, the wires have been removed, and this work is now being extended to the streets next in importance. On Sixteenth Street also a new and ornamental system of lighting is being installed, one handsome standard serving as both trolley and light pole. The pole is one selected by the art commission out of a large number of especially prepared designs. The welcome arch, erected at the Union Station and paid for by enthusiastic public subscriptions, has been completed, the art commission looking after its artistic excellence. The park commission has been active in securing additional park areas, and in improving the development of those already possessed. Real playgrounds have been constructed out of bare spaces that were called playgrounds until the report showed how out-of-date they were, and now an instructor is employed to direct the play of the children and supervise the use of the gymnastic apparatus. Vacant lots are under cultivation and 10,000 trees were freely distributed, with instructions for planting, on Arbor Day. The Pioneers' Monument, for which $60,000 was subscribed, will soon be a visible reality, and as to the ambitious but costly Plaza scheme, which was to open the State Capitol and give to Denver a center almost unique in splendor—that is still a dream, but not yet a vain one. The proposition to issue bonds that would enable the city to pay for this improvement in one swoop was defeated; but by so slender a margin that its friends by no means lost hope. There is more than one way to compass it, and the question was so complicated at the polls by the unexpected



MR. W. B. DINSMORE'S HOUSE.

Tuxedo Park, N. Y. Donn Barber, Architect.

injection of a municipal ownership and anti-franchise move last spring that the verdict could hardly be considered a deliberate expression of popular opinion on the subject. The prediction is made that Denver will yet attain the magnificence that can be hers.

A HISTORY OF ARCHITECTURE BY RUSSELL STURGIS, A. M., Ph. D.

We have received from the Baker & Taylor Co., (New York) the first volume of "A History of Architecture," by Russell Sturgis, A. M., Ph. D. This first volume deals with the buildings of antiquity and brings the subject matter down to the end of Roman Imperial Architecture. A lengthy review of this important undertaking is in hand, and this present short notice is intended merely to draw our reader's attention to the most important architectural publication of recent years. Evidently this work is intended to be a standard history of architecture in English, the scale of the first volume, the scope of the illustrations, the patience of the text in dealing with details, all indicate this. The actual performance as exhibited in the first volume makes it tolerably evident that the intention has been fully realized and that we at last possess in the English language an authoritative standard history of a great art. Every person who has any serious interest in architecture will need this new history. The book is very handsomely manufactured. The three volumes in cloth are sold for $15.00 a set, half morocco $22.50 (carriage extra). Individual volumes may be ordered at $5.00 and $7.50 each, according to style of binding, but orders are taken only for the three volumes as a single set.



MR. W. B. DINSMORE'S HOUSE.

Tuxedo Park, N. Y.

Donn Barber, Architect.

A Chance for Every Specification Room

What follows is especially addressed to those whose duties in architects' and builders' offices necessitate their making use of catalogues.

Sit down for a moment and think!

Bring to your mind catalogues big and little—the large volume of Jones & Co., the smaller catalogue of Brown & Co., the mere pamphlet of Robinson & Co. Whenever you have turned to these catalogues have you not done so for a definite purpose? Usually you were in search of some specific piece of information—size, price, weight, name and address, or something else of the same kind. Certainly you did not turn to these books or booklets with any intent of "doing a little reading." Probably you were in a hurry. You wanted to get at a fact. You needed a book that would answer your question in precisely the same sort of way the telephone book gives you the telephone number of the subscriber you are seeking.

Now, the question we want you to decide is this: Does the ordinary average catalogue sent to you by building material firms serve you as well as it might?

Is it arranged on the most logical plan? Does it assist you in the task of reference? Does it render up to you in a clear, unmistakable manner the information you want?

Or, on the other hand, is it put together and arranged in a comparatively imperfect way? Is it clogged with "reading matter" and "salesmen's talk"? Is it deficient in the specific information that would really be of value to you in the making of specifications and the development of plans?

If you were going through the catalogue and adjusting it for your own purposes, how much of the reading matter would you exclude; how much new material would you add? What would be the exact nature of these omissions and additions?

Many of these catalogues contain illustrations, some of them very pretty pictures. You get views of the Congressional Library, State Houses, post offices, residences of prominent persons, etc., wherein the manufactured goods are installed. Are these pictures of any value to you? Would you, for *your* purposes, exchange them for really good working diagrams and technical drawings?

Some catalogues are little and some very big. Which is the better? Is there any rational size?

Then again, as you know, the makers of catalogues expend an enormous sum of money on what is called "artistic" covers, heavy paper, stamped and gilded. A lot of money is also spent upon fancy colored inks and delicately tinted papers, novelties of almost effeminate character. Do these serve any purpose in the specification room? Would this expenditure be more wisely made if devoted to services of direct utility?

You know, of course, that millions upon millions are spent annually in the United States on catalogues. The cost of these catalogues is, of course, charged against the goods or the services which the architect, the builder or the owner subsequently buys. Literally thousands of these catalogues, big and little, are sent out annually in the hope that they will be maintained and used in specification rooms. You also know, of course, that only a very small proportion really ever get into service. A great many are thrown into the waste-paper basket shortly after the mail car-

or before April the 1st, 1907, to the headquarters of "SWEET'S," No. 11-13 E. 24th St., New York City.

rier has delivered them. A great many more are put aside with the idea that they may "come in handy" some time; which they rarely do. After gathering dust for a time and obstructing shelves, they are thrown away. A small minority are retained. But even this small minority are, after all, quite numerous. They are put into boxes or arranged in files or cabinets.

Whichever plan is adopted, it requires labor and entails cost. Moreover, is it really effective? Don't the catalogues get out of place? Don't they become old and obsolete? Doesn't it really happen that the one you want is never on hand at the essential moment?

Now, can you not think of a better way of arranging and handling this trade information?

For instance, would anything, in your judgment, be gained by making all catalogues of the same standard size; by printing them all in the same type; by arranging them all logically one following the other in alphabetical order, by omitting from the reading matter all advertising and "hot air"; by adding to the reading matter all the facts and nothing but the facts that are *required in the specification room;* by then binding all these catalogues together in one volume or a series of volumes, and adding to the whole a complete cross index so that you could find in a moment anything you were looking for.

Would an arrangement of that kind be an improvement on the existing state of affairs? If not, what can you suggest?

If you will sit down and write out your ideas in clear English, telling us:

(1) What the catalogue, as you see it, should contain.

(2) How it should be arranged, printed and distributed.

And after having typewritten the same, send it to "SWEET'S" at the address below, you will have a thoroughly fair chance to win one of the four prizes mentioned—prizes which will be awarded by an impartial judge whose name will be announced later. The competition is open freely to all who may desire to compete, without charge or consideration of any kind.

"SWEET'S" will give a first prize of $100.00, a second prize of $75.00, a third prize of $50.00, and a fourth prize of $25.00 to the four best papers that shall be sent in to it dealing with the catalogue. It is understood that the manuscripts sent to "SWEET'S" may in all cases become the property of the publishers upon payment to their authors of a consideration to be mutually agreed upon between the publishers and their respective authors, and that the publishers shall have the right of printing any or all such papers.

It is to be understood that fine writing will not count in the award, which will be largely based upon the completeness of the analysis and criticism of the catalogue contained in the paper submitted.

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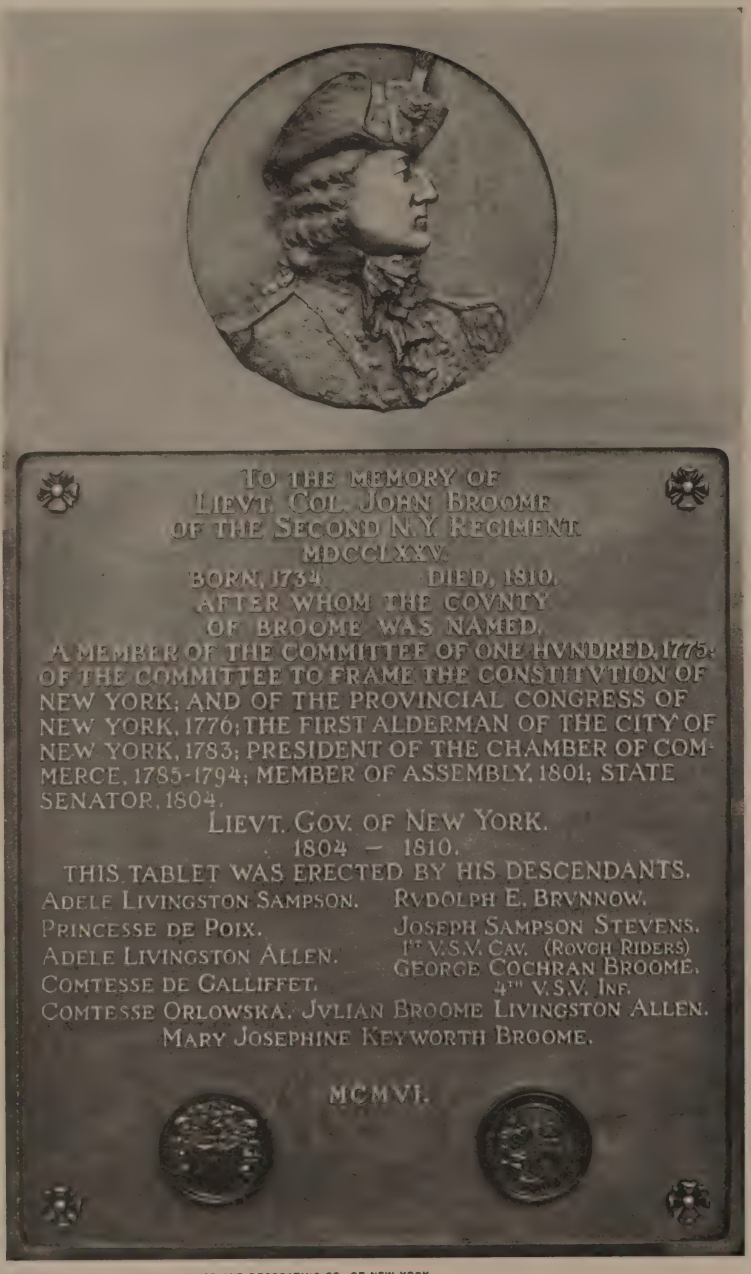


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FROM THE STUDIOS OF THE CHURCH GLASS AND DECORATING COMPANY OF NEW YORK

The
Architectural Record

Vol. XXI APRIL, 1907 No. 4

Boston Suburban Architecture.

Although the number of people having an immediate interest in the city residence is constantly increasing from year to year, yet it must forever remain of relatively small importance compared to the far greater number actively concerned in the obtaining of less expensive suburban homes. Besides the continued disproportion in numbers that must exist between the city dwelling, in comparison with those built upon the suburban or semi-suburban lot, the interest this type of house has for the general public is further lessened by the very distinctive local character that yet appertains to the city home; the urban residences of Chicago, New York, Philadelphia or Boston being of types individually and radically different each from the other.

As a result, while the resident of one city is interested in the dwellings being erected in another, he is yet not able to compare them with the work done about him in the same direct and vivid manner as is possible with the country or suburban house that, whether belonging to Maine or California, is rarely so entirely a product of local conditions as to fail to be of interest to the prospective home builder, wheresoever he dwells. The matter of cost is, also, of impor-



HOUSE OF MR. EBEN D. JORDAN—FORE COURT.
Manchester, Mass. Wheelwright & Haven, Architects.

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tance. Not only is it possible to build the fully equipped suburban dwelling for a sum much smaller than is required to erect the city house, but the initial expenditure for land is also correspondingly less, and a much greater land area—offering wider possibilities of individual plan development and attractive design—may be obtained in the country for the smaller sum,—an amount that ordinarily increases the greater the distance from the heart of the city.

In the more crowded American cities, notably those along the Eastern seacoast, the restrictions that hedge in the city house, upon every side, limit its possible variations of plan to two or three well defined types; while the difficulties of the æsthetic problem presented by its narrow twenty-five foot facade continue to interest only because of the remote possibility of its perfect solution. Therefore, interesting as is this type of dwelling, it is necessarily destined to appeal to comparatively few of the people occupied, either from the point of view of owner or of tenant, in the building of homes.

That this condition of living must, too, of necessity, continue to exist in much the same relation as at present, is apparent after a moment's thought—if only from the relatively large amount of land that must always remain at some distance from the business centers of our larger cities. It is this fact, much more than any considerations of comparative expense (one side of the question that we Americans are inclined to arrogate to an undue importance!) that will prevent the present proportion from varying much in the future; unless some more radical changes in real estate and investment conditions than now appear probable are realized in the interval. The course of progress, too, now seems aimed most toward the developing and perfecting of the different methods of transportation between the business centers of our cities and their residential suburbs; with the very evident result that it will continue to be more and more conveniently possible for the major part of our city population to live in regions abutting upon the country rather than reside within the unnaturally small and restricted city dwellings that have come to conform, through all our close-packed centers of civilization, more and more inevitably to a fixed and conventional type.

While less sharply demarked in the suburban than in the city residence, there is still apparent an unmistakable tendency for each locality to produce a certain type that, even though it may not be solely native to that vicinity, is there produced in large numbers and in greater perfection than in localities far removed; although—in some one of its variations—it may occasionally be found in any other portion of the country. For instance, Los Angeles, with its perpetual attempt to reproduce in plaster some aspect of the "mission style," so called; St. Louis, with its quite singular three-storied hybrid product of a house that is neither of city nor of country, but appertains to both; Philadelphia, with its suburban variation of the local picturesque, and brick and stone Colonial idea; and finally Boston, with its more restrained expression of Colonial and the other conservative "Englishy"—derived styles.

New York is too cosmopolitan to be limited to any one style; either to a style of her own, or to any one of the many in existence elsewhere throughout the country. There alone may be found, within the greater radius of her suburbs, types suggestive—if not representative—of all those extant throughout the states to which she forms both a gateway and a capital; a perpetual states-fair representing—architecturally—the country of which she is the epitomized product. Yet this cosmopolitanism of taste has not prevented that city from achieving an individual type of city dwelling; although, even among these tall narrow façades, it requires no lengthy search to discover suggestions hinting at the city façade as it exists in the few other localities where this constricted type of dwelling has been produced. Only the pressure and peculiarity of the conditions surrounding the latter problem have in themselves been responsible for striking out a plan and fa-



THE GARLAND HOUSE.

Hamilton, Mass.

Winslow & Bigelow, Architects.

çade, minted from a general die, that may not vary radically from its type, wherever it occurs.

Many other cities there are where, while less demarked and definitive, the suburban house yet attains to a distinct individuality, though it may express itself in more than one direction or type. San Francisco, Chicago, Minneapolis, Detroit, Buffalo, Pittsburg, are a few that come at once to mind. The same characteristics that work themselves to the surface in individualizing the urban residences of our different cities are equally certain to appear—though in a less markedly noticeable degree—in our less restricted and conventionalized dwellings. But here there is to be felt the effect of a counter-current, as from the merely greater universality of appeal of this smaller, less expensive structure, we have the insistence of its constant tendency to revert to a more representative generality of type. So the suburban dwelling—while in certain localities it may retain much of this same local distinction of style—is of such universal interest as to make it, from its very variety, of vital suggestive value to all those interested in the subject throughout the country.



RESIDENCE OF DR. JOEL GOLDTHWAIT.
Milton, Mass. Winslow & Bigelow, Architects.

How far individuality or "local character" in architecture may be attributed to the influence of the general population of that section of the country, and how far it is the result of the individual characteristics of those architects practicing in the vicinity, is a question that, despite its theoretic interest, is yet little likely to meet with a generally acceptable solution. The question of plan alone is not important. That is, houses of identical plan may not appeal to the casual passer-by as being alike, from



OCEAN SIDE—HOUSE OF MR. EBEN D. JORDAN.

Manchester, Mass.

Wheelwright & Haven, Architects.

mere differences of decorative treatment that it is possible to adapt to them so successfully as to quite conceal their likeness in plan. For this disguise, the individuality of the architect is perhaps solely to be held accountable!

How much the client himself is responsible for the exterior appearance of a dwelling is always an unknown quantity. It frequently happens that he may have had considerable influence upon its general character and aspect, although—unless he possesses some considerable technical knowledge of architecture—this influence can never pass beyond mere general criticism upon the drawings as they are presented to him at different times during the definition of the plan and the progress of the work. He may demand a certain kind of a bay window here, a porch there; or a balcony, dormer or gable here; but the architect, in the mere expression of these features, the minutiæ of their detail, the outline of their mouldings, may express his own self and the individuality of his office. Even more important—though often less distinctive—are those factors of composition; of proportion; the relation that each feature bears to the other features; as well as the means by which they become parts of the consistent whole, that speak for the skill and artistic feeling of the dwelling's designer for the essentials of successful residence architecture. These things almost invariably remain within the designer's control, as do also the processes by which the desired ends may be obtained.



HOUSE OF MR. JAMES J. STORROW.
Lincoln, Mass. Winslow & Bigelow, Architects.

These processes are and must continue to be mysteries into which the mind of the client cannot often follow. Although he may have instigated these changes in the first instance, and even be responsible for the general form of the result, yet there comes a time when the mere conventional processes—the technique of the art—must baffle and erect a wall between the amateur and the professional that even the exceptionally inquisitive client must recognize and respect.

Often it will be found that what seems

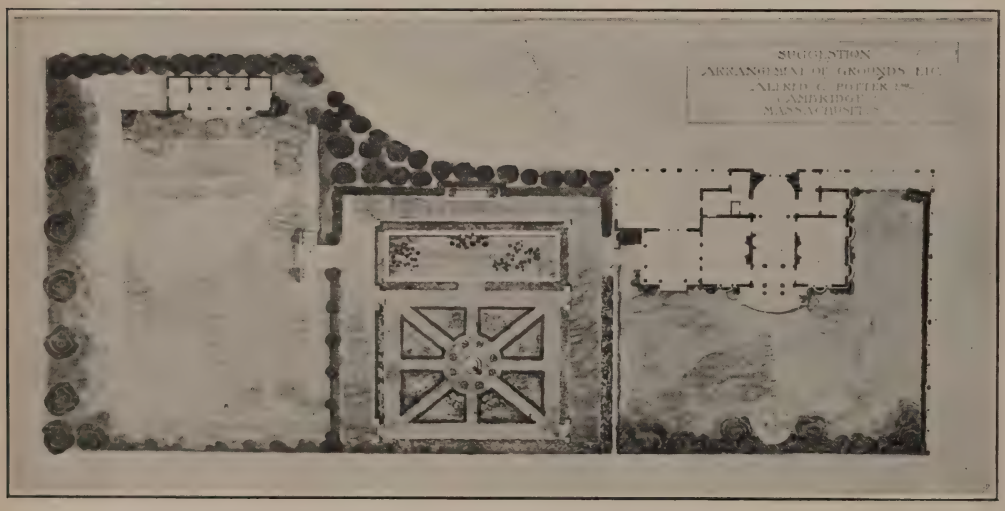


Waltham, Mass.

A GARDENER'S LODGE.

John A. Fox, Architect.

to be a distinctive local type is not so much the general spontaneous expression of that locality—historically—as it is the product of a particular office or group of offices. Indeed, there exist a half-dozen or more cities where certain architects, or groups of architects, are so closely associated with the residence work that is there being done that even the mere naming of that locality carries along with it the suggestion—almost even assumes or presupposes the reference—to those local designers who have most influenced the residence development of that particular section of the country.



PLAN OF THE ESTATE OF MR. ALFRED C. POTTER.
Cambridge, Mass. Richard Arnold Fisher, Architect.

This is as true of Boston and its vicinity as of almost any other locality that could be named; but Boston is fortunate in having—more than any other city in the United States save one—a greater number of men capable of producing domestic work of such originality in point of view and architectural outlook, that it is generally easy to distinguish their houses at a glance from the ruck and commonplace surrounding them. So, in running hastily over the more notable of the structures recently built hereabouts, it will be found that a large proportion of the best work done around the city may be easily traced to those among its leading architects that possess a distinctive style so sharply individualized that it is quickly recognizable, for good or ill. Besides the several well-known firms who would certainly be included within this group, there are an even larger number of younger men who are producing interesting modern dwellings of equal merit, and often of greater variety of interest. Of course, as in other localities, the great proportion of the residence work must be cheap and popular in its character, and generally of a less certain and inevitable standard; but even in the speculative building districts about the suburbs, the recent years have brought a most encouraging improvement in this particular.

The nearer one goes to the Eastern coast the more potent is the influence of historic architectural precedent—especially English historic precedent. Not only does that portion of the country itself contain the existing tangible expressions in brick, stone and wood, of an earlier historic architecture, which has itself attained to the distinction of a "style"; but there also—as much by convention and inheritance as by geographical affinity and surrounding precedent—has been the strongest expression of the

tendency toward the "reproduction of type" of our English-derived and inherited architectural forms.

Of the Middle and North West none of these statements would be true. Not only do they possess no early existing architecture worthy of perpetuity,—but it is not even of an age sufficient to render its remains worth consideration as examples of any architectural "style," other than of the most local and transitory expression. The inhabitants have, indeed, been drawn from the same Eastern strip of the country that was earliest settled, yet, in their very temperament and their independence of character that caused them to become units in the Western migration, they possessed the common germ that was to free them in large part from the conventions and restrictions still narrowing the East. And it was this very grain of originality that—in its architectural expression as in other directions—has caused them to venture into new fields and experiment with methods of building and design that were at once different from those suggested by history or custom; and that should prove to be of ultimate value toward counteracting the tendency to be unduly influenced by mere precedent, and the dead and gone history of architectural expression, that is apparent in much of our national architecture. The results already achieved there have ever an individuality that—while often incongruous, but partially formed, uncouth, or even sometimes crude in the extreme—yet possess a certain value and suggestion that sooner or later, under the constant urging and experimenting of an inherited temperament, may develop into an architectural style expressive and distinctive of that section of the country and its inhabitants.



RESIDENCE OF MR. ALFRED C. POTTER—FRONT.
Cambridge, Mass. Richard Arnold Fisher, Architect.

In the far West, again, this same spirit of adventure expresses itself, often to an even less repressible degree. It was here, too, that wood, forming the very backbone of the architectural style

carried on the crest and outermost advancement of this slow western-moving wave, met the lingering outposts of another far-flung movement that had left enduring architectural monuments in the shape of the brick and plaster Missions existing in our possessions of the far West and Southwest. A movement it was of which the momentum had long been spent, but which had, in a time more remote, under impetus of the red-hot fanatical zeal of religious fervor combined with an equally adventurous spirit, produced a clearly defined and almost perfect expression of an architectural style appropriate both to the movement and to the local conditions amidst which it had been placed. So perfect is this historical and natural appropriateness, that today the fact has finally been recognized and has even resulted in a wave of petty "fashion" that is endeavoring to misapply and misquote in every possible way the details of this simple "Mission" architecture, debasing them to the petty purposes of an outside covering, draped as a mere veneer upon the residence of a modern and distinctly different civilization and life. The undertow of this movement has reached even to the far East, and amongst the conservative dwellings of greater Boston may be found several recent examples of its unintelligent misapplication.

Despite Boston's conventionality, its conservatism—so marked that, it must be confessed, in the greater number of instances it but proclaims itself in a respectable mediocrity—it was perhaps hardly to be expected that we would find here, at their best, two distinctively novel expressions of idiomatic architecture; belonging, in expression of type and materials, among the most modern architectural utterances, and yet combining these effects with a refinement of idea, a certain conservatism of modulation inherent in the locality itself, that have rendered those two individual



RESIDENCE OF MR. ALFRED C. POTTER—REAR AND END.
Cambridge, Mass. Richard Arnold Fisher, Architect.



RESIDENCE OF MR. ALFRED C. POTTER—GARDEN SIDE.
Cambridge, Mass. Richard Arnold Fisher, Architect.



RESIDENCE OF MR. ALFRED C. POTTER—GURNEY STREET SIDE.
Cambridge, Mass. Richard Arnold Fisher, Architect.



RESIDENCE AT LONGWOOD, MASS. Geo. F. Newton, Architect.



RESIDENCE OF MR. HUGH D. SCOTT.

Needham, Mass.

James Purdon, Architect.

products definite styles worthy of careful study and analysis, even in almost their first hesitating expressions.

And this, too, regardless of the fact that, in the vicinity of Boston, the suburban house partakes of a certain generality of aspect which, while it may not always be sufficient to distinguish it from some examples of country houses in other sections of the country, yet invariably renders it true to its type. There will be found but few bizarre and eccentric dwellings among these illustrations, for domesticity, for conservatism, for refinement; and it is only in their failure to achieve these qualities more perfectly that they sometimes become peculiar and noticeably extreme.

Your average Bostonian is a man of conservative methods and of conservative mind. It may be that the cement and plaster house *is* cheaper and more up to date than the dwellings he has been accustomed to see around him; it may be that in the West they *are* being built successfully and in great numbers, but



A RESIDENCE ON WALNUT STREET.

Brookline, Mass. Wm. G. Rantoul, Architect.

and this is actually because such do not there exist. With the exception of the one or two exceptions already mentioned—themselves the expression rather of an exotic temperament or foreign individuality (perhaps even of that perverted underlying trait, common to all the American people, that demands something unusual, something out of the ordinary, and that frequently expresses itself in mere latent ill-taste)—lots of instances there are of peculiar or extreme examples of the dominant type, but always they are determined by a feeling

none of these facts make the least impression upon him and he will go on reproducing as closely as possible the type to which he and his predecessors have become thoroughly accustomed, until some cataclysm of sufficient power and personal effectiveness occurs to awaken him to the fact that he is actually far behind the times.

Of the styles most in favor, those based upon conservative English precedent most appeal to him. When the slightest trace of modern English influence appears—sufficient, that is, for

him to recognize it as such—the design at once loses its value and appeal so far as he is himself concerned; but always when it reproduces something that occurs to him as being suggestive of historical English types—be they clothed in Elizabethan, Georgian or Colonial detail—that fact alone is often sufficient to commend the structure to his approval.

As a result, it will be found that many of the dwellings about Boston may be classified as of direct English style or



A RESIDENCE AT MANCHESTER-BY-THE-SEA. 274

inspiration. The great majority of those that remain will be Georgian; or its American derivative, Colonial. Others again will be so simple and unpretentious that, except they suggest the possible precedents of English Georgian architecture, they will hardly otherwise be easily defined. This latter type frequently verges upon the simplicity of the best of the old Southern Colonial as it exists today in comparatively few actual

examples. It is true that at one time —not many years ago—Boston formed the active centre for the production of a style of residence architecture, yclept "Colonial" that, while suggested in many ways by work of the Colonial period, had yet become so debased and uninspired, so commonplace, thin and mongrel a type as to ever since bring discredit upon a style that is, in its true spirit, one of the most delightful, historical and insular expressions in architecture of the life of any people; while as the sole architectural style that is a product of our own country, it should be our particular pride to cherish and perpetuate that which is best in it. However, this modern degeneration and emasculation of this vigorous style, as it happened, but paved the way for the sturdier, more vitally modern variations that have succeeded it. Along with the other movements originally started with artistic in-



RESIDENCE OF MR. C. LAVERNE BUTLER—STUDIO AND KITCHEN, FROM GARDEN AND REAR.
Framingham, Mass. Frank Chouteau Brown, Architect.



RESIDENCE OF MR. C. LAVERNE BUTLER—STREET FRONT.
Framingham, Mass. Frank Chouteau Brown, Architect.



RESIDENCE OF MR. C. LAVERNE BUTLER—LIVING FRONT.

Framingham, Mass. Frank Chouteau Brown, Architect.



MR. CASWELL'S HOUSE—ENTRANCE PORCH.

Beverley, Mass. Winslow & Bigelow, Architects.



THE CASWELL HOUSE—FRONT.

Beverley, Mass.

Winslow & Bigelow, Architects.



THE CASWELL HOUSE—TERRACE AND DOORWAY.

Beverley, Mass. Winslow & Bigelow, Architects.

dividuality, but running into the bizarre eccentricity and exaggerated extremity of bad taste, such as the Richardson "Romanesque," the classic "Neo-Greek" revival, the Morris and "Mission" styles of decoration and printing, and other casual fads of a decade; having once run their allotted course, they prove of themselves that essentially they were not originally based upon those somewhat intangible, yet inevitably recognized precepts that underlie all enduring and true art and that are alone sufficient to carry a fad into the permanence that renders it worthy of designation as a definitive "style."



HOUSE OF MR. JOHN BURNHAM.
Wenham, Mass. Winslow & Bigelow, Architects.

The latest, most modern, and most perfectly localized expressions of the suburban dwelling are here essentially simpler in every instance than the historic style to which they are yet apparently related. Such an example as the Goldthwait residence in Milton by Messrs. Winslow & Bigelow, while inspired by Colonial and Georgian precedents, for instance, is yet simpler in almost every bit of detail than any historic example of the style that can be directly quoted. Yet, with all its simplicity, it expresses with sufficient strength, by means of a few delicate, definite touches, an innate feeling for the technique of the material in which it is carried out. A more pretentious and, technically, perhaps more interesting example is the Storrow house at Lincoln, where, in the same material, is expressed a plan and style essentially British, yet neither slavishly the English of historical association, nor that of modern expression. It contains sufficient originality and variety to be both American and local in its general effect and minor characteristics.

More set and conventionally English—English, too, of even more historic formality of type than the Mother Country herself would often provide us—is the Garland House, by the same designers; set thus in direct contrast with the previous dwelling, it suggests the greater ease and felicity with which the modern



STABLE OF MR. JOHN BURNHAM.

Wenham, Mass. Winslow & Bigelow, Architects.



HOUSE OF MR. JOHN BURNHAM—FROM ENTRANCE DRIVEWAY.

Wenham, Mass. Winslow & Bigelow, Architects.

mind handles the more current architectural style. Where one appears over formal and often somewhat awkward in proportion, the other betrays a greater intimacy and surety of touch—a greater familiarity, if you will—that invariably works for a better understanding between the style and the designer, an understanding that succeeds in expressing itself perfectly in the finished dwelling. This trait will be noticed as evincing itself even more consistently and inevitably in the dwellings by the same firm



MR. BIGELOW'S HOUSE.

Milton, Mass. Winslow & Bigelow, Architects.

executed in another material—the more fashionably modern plaster—that follow.

The Jordan house at Manchester, one of the many new and expensive residences that are replacing the modest old-fashioned dwellings on the estates along the North Shore of Massachusetts, is in part conceived in the same style as the Garland house, and, so long as it sticks to this same material—brick—it must be conceded that it more successfully reproduces, with apparent ease and assurance, the real proportions and appeal of this attractive period. As seen from the entrance front, over the walls of the forecourt, the structure—with the exception of the somewhat over-ornate stone carving around the entrance—is simple and dignified, as well as being quite distinctively English in effect. When we turn to the sea front of the same building, however, where the designers have abandoned the use of brick and confined themselves almost exclusively to a plaster and half-timber construction, this finer sense of restraint has been lost. The change in material appears to have allowed the entire design to degenerate into a composition that possesses neither scale, refinement nor beauty of proportion to commend it; until it is only suggestive, in the exuberance of its treatment, of certain Teutonic influences that not only fail in refinement, as is here the case, but seldom succeed in otherwise commending themselves to our better understanding. This fact is, too, the more regrettable from the great charm and distinction of the half-timber stable belonging to the same estate. At one side it abuts upon and almost overhangs the railroad, but



MR. BIGELOW'S HOUSE.

Milton, Mass. Winslow & Bigelow, Architects.



MR. BIGELOW'S HOUSE.

Milton, Mass. Winslow & Bigelow, Architects.

a photograph of the court that faces across the road toward the house, itself placed upon the water side of the public drive that divides the estate, is thoroughly interesting, simple and picturesque, suggesting indeed—curiously enough—perhaps almost solely by its latter quality, a French derivation.

One of the most attractive essays that Boston affords us in the use of brick after the Elizabethan or Tudor fashions, is the charming gardener's lodge near Waltham, by John A. Fox, architect. Aside from its effective use—in combination—of brick, plaster and half-timber, this dwelling possesses other points of practical structural interest. The half-timber, for instance, is placed quite outside of, and free from, the surface of the plaster; so that it offers none of these opportunities for weather to enter into the shell of the dwelling that frequently occur in this climate when the two are placed side by side. The capping of the gables, too, is not stone—as might appear in the photograph—but was made of lead beaten into the outlines shown, where it most decoratively and satisfactorily carries out the purpose for which it was intended.

Cambridge has, within the last few years, begun to include a number of houses of refinement and simple dignity within the district near to and just beyond the College Yard, although the majority are still inexpensive as to cost and often, as well, correspondingly small in size. The residence of Alfred C. Potter, but barely completed at the time it was photographed, is interestingly unusual and somewhat unique in its plan solution of the problem presented by the lot that was to developed; a problem complicated by the comparative importance of the bounding streets, as well as the differences in the grades, all combining to necessitate a treatment of house and lot



STABLE OF THE SLATER HOUSE.

Hyde Park, Mass. Winslow & Bigelow, Architects.

so unusual that it seems quite worth while to reproduce the layout for the entire estate, as that alone will explain the reasons determining the house arrangement as displayed by the photographs of its exterior.

Difficult as it is to pick out any one dwelling as representative of the architectural atmosphere of modern Boston, perhaps this one structure would more correctly approximate that position than any other among the accompanying illustrations, many of which of necessity fail to meet this condition from the very success with which they express the personality of their individual designers. In this dwelling, the architectural style is neither distinctively American, Colonial, nor any one of its English predecessors, but successfully includes and combines the atmosphere and numerous details of both, while with it all it never fails to express again and again both the modern spirit and the individuality of its designer. In one place we find a classic arch and column motive that may be either Georgian or Southern Colonial, as you prefer. The detail of the columns at the entrance is as classically refined as those used on the porches of Mr. Purdon's house at Needham, and neither slavishly English nor strictly Colonial Doric in type. The general outline of the house, with its single ridge and end gables, strongly suggests the New England type of Colonial dwelling, more closely reproduced in Messrs. Kilham and Hopkins' house in Longwood; yet by a few delicate touches it is individualized and rendered modern in its effect in a way that identifies it with some of the most recent and up-to-date contemporary work in England.



HOUSE OF MR. F. MURRAY FORBES—ENTRANCE FRONT.

Needham, Mass. James Purdon, Architect.

Many of the best examples of local dwellings expressing a modern feeling in architectural design are already familiar to the general public, such as the well-known and much reproduced Master's house at Groton by Mr. Clipston Sturgis, for instance; but there have been built



A PLASTER HOUSE IN AMORY STREET.

Brookline, Mass. Wm. G. Rantoul, Architect.



HOUSE OF MR. F. MURRAY FORBES—MAIN FRONT.

Needham, Mass. James Purdon, Architect.

recently two or three essays in Georgian residences based more or less closely on English work of the time of Inigo Jones and Sir Christopher Wren that are notably successful, and far less hackneyed than dwellings derived from either Elizabethan or historic Colonial models. Two of these, the Henry S. Howe residence, by Peabody & Stearns, and a simpler dwelling by Geo. F. Newton, occur in a near-lying suburb of Boston, generally

The residence of Hugh D. Scott at Needham is in a district that has but recently begun to be fashionably rebuilt and suggests modern comfort in a design that is curiously and successfully a compound of Colonial and earlier English motives. Brick is even employed most satisfactorily for many of the small dwellings placed upon the lots of the more closely built suburbs, such as the little house on Walnut street, Brookline,



MR. TABER'S HOUSE IN CHESTNUT HILL, MASS.
Purdon & Little, Architects.

called Longwood, that remains still charmingly rural in aspect, despite the fact that it lies upon the very verge of the city proper.

That brick is a favorite local material, the dwellings in the suburbs of Boston provide ample evidence; many being mansions of considerable size and extent. This material is, indeed, most in favor for use on estates of importance. by Mr. Rantoul, that appears to advantage in the quiet contrast it offers to the more nervously picturesque structures that have recently crowded around it.

Before turning to the dwellings that, from the mere restriction of their exterior wall surfacing to one material, plaster, have been classed within another group, it may be interesting to suggest the possible link connecting some of the



A HOUSE IN DORCHESTER, MASS. Edwin J. Lewis, Architect.

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Brookline, Mass. MISS BURRAGE'S HOUSE. Lois L. Howe, Architect.

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simplest of these with an historical precedent native to our own land, by reproducing here a house built a few years ago at Manchester-by-the-Sea, of brick. The fact that the dwelling is of brick, although its most distinctive feature is yet obtained in the portico-colonnade of two-story plaster columns that extends across its principal front, makes it sufficiently evident that the design was suggested by some of the well-known stately South-

front, the other showing the living room length of the residence toward the river, another the corner angle where studio and dwelling meet. Here the similarity of type cannot be denied, even though quite a different aspect has been obtained by the mere simplicity given by the large spaces of plain plaster that—instead of brick—compose the surfaces of the walls. From this house it is but a short step further to the Caswell residence, the



A RESIDENCE IN LONGWOOD, MASS.
Kilham & Hopkins, Architects.

ern Colonial dwellings that are familiar to all who have had occasion at any time to study the early history of Colonial architecture in America. Possibly the transition from this distinctively Colonial brick dwelling to the yet more modern-appearing plaster version of the same type may be made yet plainer by viewing one more residence, the Butler house at Framingham, illustrated by several photographs, one toward the street

Burnham house (in the latter case, allowing of course for the variety lent by the distinctively Greek detail of portico and porches) and stable, and even to Mr. Bigelow's own more suggestively Italian house in Milton. Where the photographs so excellently speak for themselves, it seems unnecessary to further direct attention to those points that any person of discrimination may well ask to have the pleasure of finding for himself.

Among the smaller residences, where numbers multiply, it becomes more difficult to pick out representative examples, but the several photographs of houses in different parts of Boston are certainly well worthy of representing a part, at least, of this group of Boston suburban

much to enhance the charm inherent in the houses themselves. Yet even under these trying conditions, the sheer architectural merits of outline and composition can but the more certainly exhibit themselves. Extremely simple as these buildings are, they are yet indicative—by



CHURCH OF THE DISCIPLES, BOSTON BACK BAY.
James Purdon, Architect.

BOSTON PUBLIC LIBRARY

architectural products. Mr. Rantoul is also the designer of several plaster houses in Brookline, of which one is herewith reproduced, from a photograph taken before the grading was fully finished, and any benefit was to be derived from the planting that has since done

their refinement or concurrence with such established and conventional types as the gambrel roof Colonial cottage, for instance—of those factors in the architectural development of Boston and its vicinity that have already been commented upon somewhat at length. More



HOUSE OF MR. FARNHAM. 278

Chestnut Hill, Mass.

James Purdon, Architect.

BOSTON PUBLIC LIBRARY



Wenham, Mass. HOUSE OF MR. T. C. HOLLANDER. Wm. G. Rantoul, Architect.

formally architectonic in its general scheme, yet Mr. Purdon's simple plaster house at Needham for Mr. F. Murray Forbes is easily worthy of inclusion within the same group. It needed only the added ease of unrestricted length, that seems to have here been circumscribed by the natural exigencies imposed by the site, to have allowed it to expand into a little less fixity of poise—to have exchanged for the somewhat formal politeness of its architectural restraint the more directly appealing smile of frankly human fellowship.

Another dwelling, indicating how effective simplicity may be, even in a style so supposedly fussy as one having the English suggestion of Mr. Lewis' house in Dorchester, is a case in point, while other small houses that speak for themselves are Miss Burrage's house in Brookline, Mr. Taber's house in Chestnut Hill, and Mr. Farnham's house in the same locality; the latter being an interestingly simple shingled dwelling, and the first two showing the simplest wall surfaces of plaster; while an excellent modern version of the more formal Colonial house with brick-chimneyed and gabled ends is the dwelling in Longwood on Essex and Ivy streets by Messrs. Kilham and Hopkins.

No display of Boston suburban architecture would be representatively complete that did not include some mention of the distinctive class of work instanced in the large country house by Mr. Rantoul, the well-known Hollander house at Wenham. This dwelling perfectly expresses the ideal Americanized version of the long, low rambling English country house, retaining all its true homeliness of aspect and interest of composition. In such a design as this much of its value results from the appropriately disposed use, in combination upon the one building, of plaster, half-timber, shingles and brick or stone for certain portions of the wall surfacing.

There has recently been built in the



THE DELTA PHI CLUB.

Cambridge, Mass. James Purdon, Architect.

Boston Back Bay district a notable church, a variation of the "meeting-house" type, peculiarly adapted to meet the New England demand for retaining a church plan that is incapable of successful Gothic garmenture and yet one to which our congregations have become thoroughly accustomed by many years of use. As it succeeds in uniting this wide, short plan with an exterior archi-

ple American residences as the Goldthwait, Storrow and Potter houses in modern brickwork; the two Longwood dwellings in Georgian English architecture; the Italian plaster composition of the Bigelow residence; the plaster Dutch and English characteristics of Mr. Rantoul's Brookline house, and the charm of composition of his more "Englishy" dwellings, such as the



THE PHI DELTA PSI CLUB.

Cambridge, Mass. James Purdon, Architect.

tecturally appropriate and modernly expressive of its proper historic derivation, as well, it would appear to supply a long-felt want in this direction. Simple, large in scale, dignified, and even bulky in proportion, it stands, an enduring stable monument, to proclaim at once the history and the purpose of its community.

To sum up, what other city is there that can point to such delightfully simHollander house; and finally, the beautiful simplicity of the Caswell, Burnham and Forbes dwellings of Messrs. Purdon and Winslow & Bigelow.

If asked to point out the most notable local contribution to our American architectural development, one would hesitate long between the Caswell and Bigelow houses; perhaps in the end leaning to the former—despite certain minor awkward incidents that mar its perfected simplic-

ity. The Burnham house is too strongly and intentionally reminiscent of Greek inspiration: Mr. Bigelow's own house, somewhat too formal, and inviting a comparison in which may be traced a quite marked resemblance with some of the less pretentious of the simple Italian plaster villas that abound through Northern Italy and along the Riviera. Somewhere between these two extremes, the plaster North Italian villa and the simple Southern Colonial homstead—and a wide latitude, too, they allow us—may be found the suggestive derivation of this class of dwellings: but, mark you, they are invariably distinguished for their simplicity, a trait that has been already noted as one of the most important characteristics in the development of our modern architecture; and in all cases, too, they are far simpler than their originals, until simplicity has attained to a point where it becomes almost entirely *un*architectonic. It is this lack of formality, of definite balance and repetition—of close adherence to precedent, if you will—that render these dwellings so appealing and attractive. In comparison with the standards of a few years ago, they appear less the product of the architect than of the artist. They have separated themselves from a balanced composition capable of definition by rule and square, and advanced to one transcending these restrictions, determinable only by a "feeling" for the right grouping that quite defies analysis and expression by rule of thumb; and by so much have they become the more nearly and appealingly human and so the more capable and worthy of sympathetic appreciation.

While many representative dwellings have been omitted, it is certain that those reproduced may with safety be considered as representative of the best most worthy and distinctive traits now developing in Boston and the residence architecture of its immediately surrounding vicinity. Many dwellings have been left out because of their already being familiar through constant publication; many others have been perforce overlooked; of quite as many more it has been impossible to obtain satisfactory photographs illustrating adequately those qualities for which the houses themselves appear most notably successful; while the number of dwellings now in process of construction that will, perhaps before this analysis is published, be completed, may express some new influence, some different trend in the direction of our local architectural development and progress. Yet this must always be so, and no architectural summary depending for its ultimate explanation and illustration upon photographs of completed work can ever expect to become a prophecy of what may come to pass, in even the most immediate future.

Frank Chouteau Brown,

The New Woman's Hospital, New York

ALLEN & COLLENS, Architects

When it was decided by the New York Central Railroad to enlarge its terminal facilities in New York, and in fact build an entirely new Grand Central Station on a much more munificent scale than the present one, it became necessary to accomplish this purpose to extend the boundaries of its site to the north, and eastward and westward. In thus spreading out, many buildings had to give way to the hand of the builder, and among these displaced enterprises was the Woman's Hospital, in Lexington and Fourth Avenues between 49th and 50th Streets. This hospital, like the railroad company, found it necessary to enlarge, but unlike the latter was compelled to seek a new location. This was readily and logically found on Cathedral Heights, or to be more precise, on 109th and 110th Streets, between Columbus and Amsterdam Avenues, opposite the new Cathedral of St. John the Divine now fairly well under way. On this site there was opened on Dec. 5, 1906, the new Woman's Hospital, a seven-story building of about 200 by 100 feet in its principal plan dimensions. The illustrations which we show herewith, plans, details, interior and exterior views will no doubt give to our architect readers more information than any description that might be made, but for those who are not architects and whose interest in the subject might be heightened by having their attention called to certain novelties in the hospital's general scheme and equipment, it may not be amiss to say something about these things.



THE WOMAN'S HOSPITAL—THE CHAPEL.
Cathedral Heights, New York City. Allen & Collens, Architects.

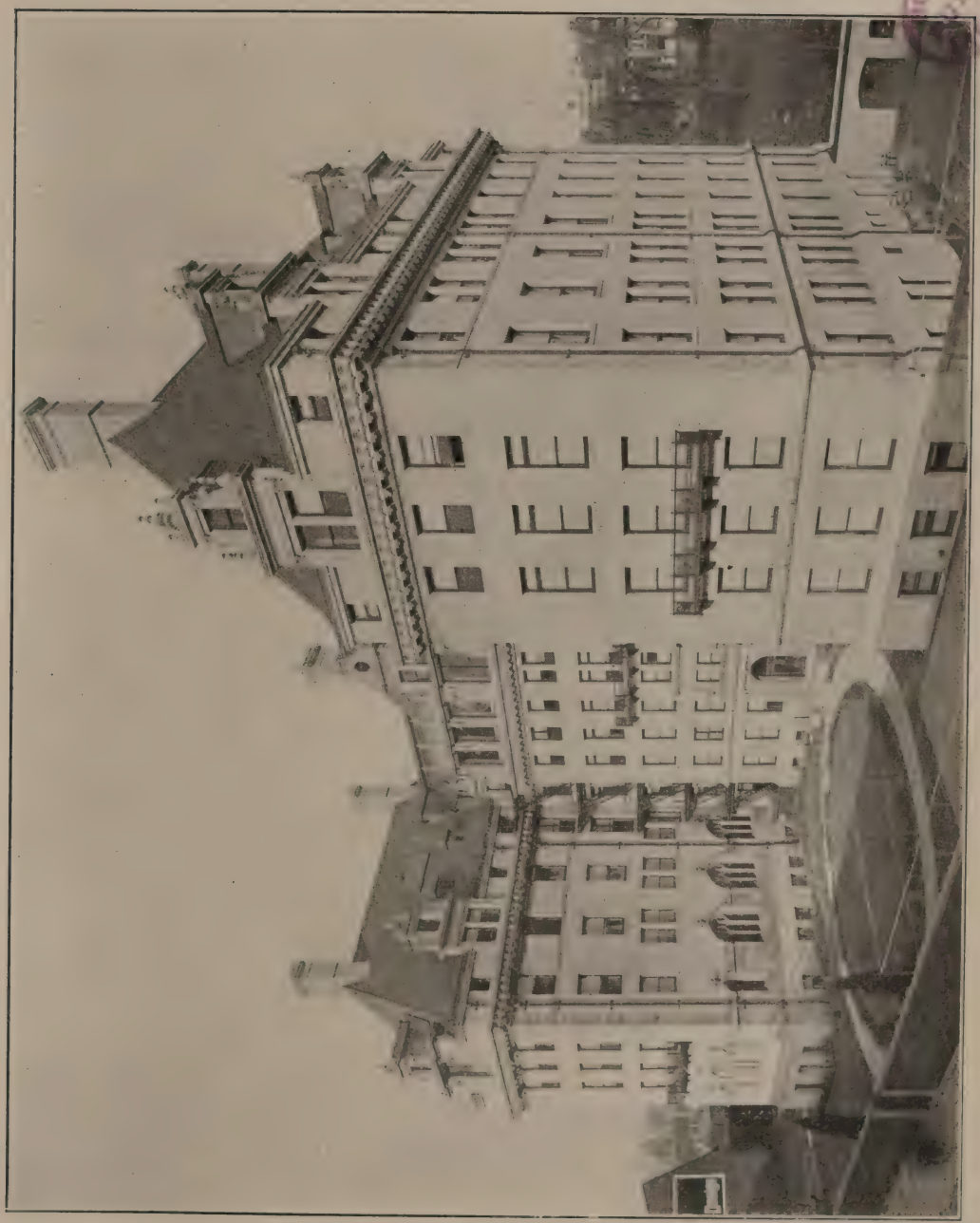
With the general progress in all de-



THE WOMAN'S HOSPITAL—VIEW FROM CATHEDRAL PARKWAY.

Cathedral Heights, New York City. Allen & Collens, Architects.

BOSTON PUBLIC LIBRARY



THE WOMAN'S HOSPITAL—VIEW FROM 109TH STREET.
Cathedral Heights, New York City.
Allen & Collens, Architects.

partments of architecture the planning and construction of hospital buildings has made a great advance. In England especially the problem of economy of service and administration has found excellent solutions, notably in those cases in which the entire hospital, like a factory, is spread over one floor, all rooms being lighted from above, and the entire plant heated and ventilated without windows. Such a system cannot, however, be employed in our larger cities, owing to the prohibitive cost of the land. The problem therefore becomes one of a suitable arrangement of services when placed in various stories in a single building. The discovery of bacteria has added another phase to the subject in demanding proper handling of detail to eliminate all possible opportunity for the retention and propagation of dangerous germs.



THE WOMAN'S HOSPITAL—THE OPERATING THEATRE.
Cathedral Heights, New York City. Allen & Collens, Architects.

Both of these problems have been made an especial study in the hospital building before us, which required a period of two years in its construction. It is as nearly fireproof as we know how to build; no inflammable materials are used anywhere in its construction, with the exception of the doors, the shelving and the window sashes, there being no finish or other woodwork in the building. While especial study has been given by the architects to the layout of the hospital in relation to economy of service, still greater attention has been devoted to the sanitary and hygienic features. As may be seen by referring to Figure 1, sections of the window and door frames, all surfaces are kept flush, and all angles both in the woodwork and in the plaster work are rounded to a suitable radius. The doors are oak veneered without panels, and every angle and corner of the building has been so designed as to admit of easy and thorough cleaning. Some difficulty was met in attempting to join woodwork and plaster on the

flush surfaces, as in time a crack naturally appears between the woodwork and the plaster. By the use of an especially invented plastic material, and a corner bead for these joints, very satisfactory results have been obtained to date. The door frames have been in the building for at least a year, and up to the present time these joints have not opened, although the building has been subjected to varying conditions of heat and cold. Another feature of the construction is composition. This latter substance is put down in a plastic condition and has proved very satisfactory after its use of over a year in this building. The material for the floors has been found to be springy, not slippery, and absolutely fireproof, as well as showing no tendency to absorb discharges and solutions; its composition is magnesium oxide, fine sawdust, asbestos, silicate glass, sand, coloring matter, and magnesium chloride. After having set, the surface is



THE WOMAN'S HOSPITAL—WARD FOR TWENTY BEDS.
Cathedral Heights, New York City. Allen & Collens, Architects.

an air space a foot wide which runs around the outside walls throughout the entire building. In this space are all plumbing, heating and ventilating pipes, brine pipes, electrical conduits, etc. This arrangement not only makes it possible to install additional systems in the building, but also affords an air space which prevents any moisture from being felt in the different rooms, as well as tending to keep the temperature of the walls themselves at an even degree. The floors of the building have been laid throughout in marble or in a specially prepared given two coats of oil. As will be seen by the details of floor angles, shown in Fig. 2, this material admits of a sanitary base, which, in the case of unimportant toilet rooms and other places where plaster would receive hard usage, has been carried up six feet on the walls.

The main corridor of the first story, and also the toilet rooms, are finished in grey Tennessee marble in accordance with the detail shown also on Fig. 2. The operating rooms are likewise finished throughout in the same marble, and all angles have been rounded in a

similar manner. The stairs are of the simplest detail, the treads being of the same substance as the floors and set in the cast iron, and as elsewhere all angles are carefully rounded. This same system has been pursued in regard to the shelving and counters. It was felt in carrying out these ideas that the result would be useless unless the execution were thorough, and to that end the same that properly ventilated and tempered air shall be introduced through ducts high on the walls, and the impure air carried off from the floor and discharged from the ventilators on the roof. In order that this system may work, it is necessary that the windows be kept closed. This insures for the patients an even temperature and freedom from draughts. All other rooms are heated by direct steam.



THE WOMAN'S HOSPITAL—THE LAUNDRY IN THE ATTIC.
Cathedral Heights, New York City. Allen & Collens, Architects.

construction has been carried through in the plumbing fixtures, which were made from special designs, the seats and bath tubs, all of which set in the floor or against the wall at a curve flush with the surface, admitting of no corner or crack where dust and microbes could collect.

The heating and ventilating of the building in all rooms where patients are to be housed are developed on a system in which it is designed that the windows of these rooms shall remain closed and as it was felt that the windows would be opened, and under these circumstances this system would be superfluous. In toilet rooms and operating rooms the air is changed every six minutes; in the ward rooms and private patients' rooms, every ten minutes, and elsewhere every fifteen minutes. The vents are free from any gratings or register faces, which might collect dust, and as will be seen by the detail Fig. 3, are rounded out flush with the wall.

The building has a complete system of sterilizing. Not only is the water and all material which is used for surgical operations properly sterilized, but there is also a plant in the basement, in which mattresses, pillows, etc., are subjected to a similar treatment, and a crematory for burning all the waste and infected material. In addition to this sterilizing plant there is a filtration plant for all water used throughout the building. A brine system has also been installed for the cold storage in the attic and for the individual refrigerators in the different serving rooms. Each floor of the building has two serving rooms, one for each wing, directly connected with the kitchen in the attic. For each one of these serving rooms there is an electric dumb waiter which stops only at that floor. The serving rooms are fitted with an especial diet kitchen and all appliances requisite for warming and serving the dishes forwarded from the serving rooms in the attic.

In this manner one could continue calling attention to the thousand and one little details in the equipment of the hospital which in their completed state are so bewildering to the layman, and, we are assured both by the medical fraternity and by the wonderful results that are achieved with their aid, of inestimable value in raising the efficiency of the institution. Since the building has been completed it has received considerable attention from the medical fraternity in New York and elsewhere. These doctors, as interested parties, have pronounced it the most modern piece of hospital sanitation existing in the city. Criticism may be made as to the cost at which such hygienic principles are carried out. Doctors, however, in these days feel that too much precaution cannot be taken in such matters, and that a lack of care in relation to the smallest detail of an operation or treatment may be fatal to the patient. The trustees have endeavored to co-operate with the doc-



THE WOMAN'S HOSPITAL—THE KITCHEN.
Cathedral Heights, New York City. Allen & Collens, Architects.

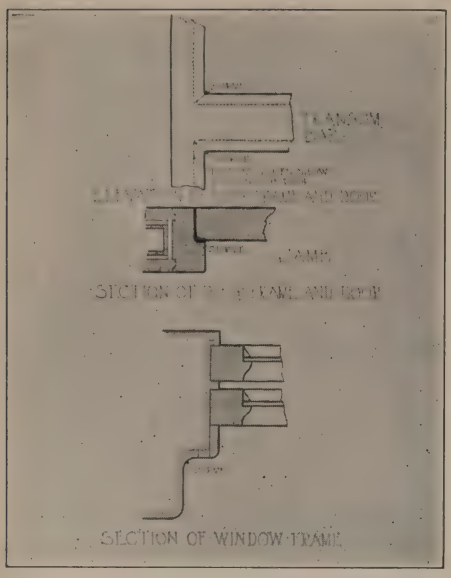


FIG. 1. WINDOW AND DOOR FRAMES.

tors and architects in this view, and are satisfied that their efforts have resulted in a structure which appeals not only strongly to medical men, but will be sought by all patients who are desirous of benefiting by all the modern discoveries along hygienic lines.

This is the first hospital in the world in which the treatment of the diseases of women as an especial branch of surgery was undertaken, and the first surgeon in charge was Dr. J. Marion Sims, through whose efforts the hospital was founded. In 1855 it had forty beds. The present building has accommodations for one hundred and twenty-five patients, housing at the same time forty nurses and thirty-two servants in separate rooms, also a corps of six doctors, together with the executive officers of the building. It is intended, if at some future time additional rooms should be required for patients, to construct in the neighborhood a nurses' and servants' ward, which would admit of the present building increasing its accommodations to two hundred patients.

The exterior aspect of the building is cheerful, and especially so in the southerly view from 109th Street. In this view the large glass room, the solarium for convalescents, in the roof of the central portion of the building, and the two-story chapel in the western wing, lend a meaning to the structure as well as interest to its architectural expression. The chapel is the special gift of Mr. John E. Parsons, of New York City, president of the hospital. The wings jut out toward the south and form on 109th Street a court protected from the cold north winds and deriving the full benefit of its southern exposure. This court forms, as has been said above, the most attractive view of the exterior, and is a happy thought on the architects' part, in that it enables the maximum of sun and light to penetrate the greatest possible volume of the hospital, especially the wards and patients' rooms, which could, perhaps, not be as well supplied with these very necessary elements by means of any other plan disposition. This court has been laid out to form a closed garden for the use of the patients, and besides this there is room in the rear for a tennis court for the use of the resident physicians.

The exterior walls are well and simply handled; though four different materials enter their composition, the colors have been so harmonized as to produce a unity of effect. The appendages on the east and west are respectively a porte cochère with entrance

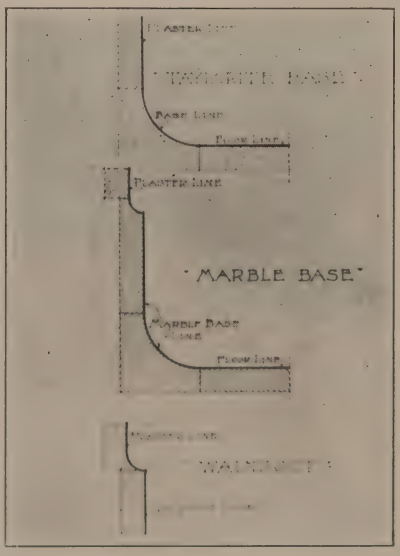


FIG. 2. ANGLES AND BASES.

drive and a service court with automobile garage. Under the terrace in front of the building on 110th Street are concealed the boiler and dynamo rooms, so that the building itself is relieved of all vibration in connection with its mechanical equipment.

[The cuts of detail which are shown in this article were published from the architects' drawings in the New York Medical Journal of December 15, 1906, and with its permission have been herewith reproduced.]

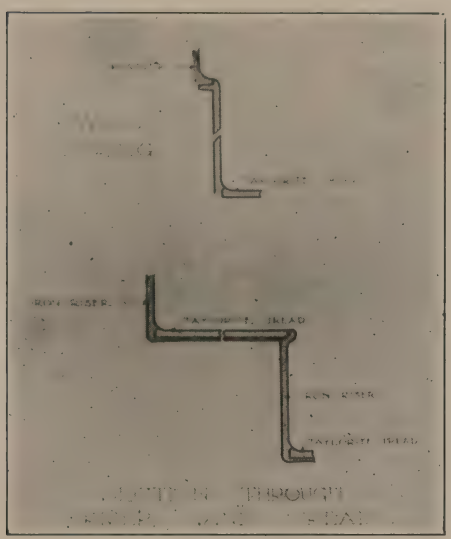


FIG. 3. STAIR DETAILS.

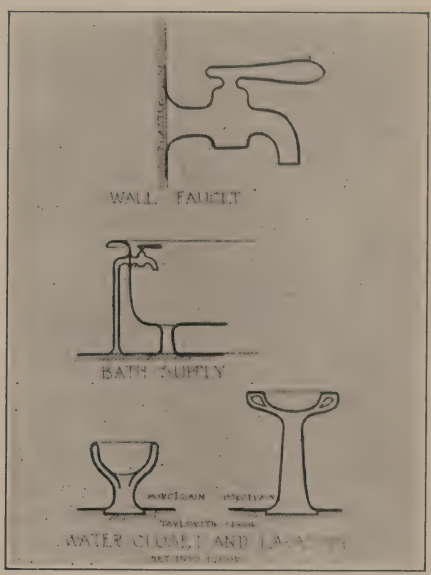


FIG. 4. PLUMBING DETAILS.

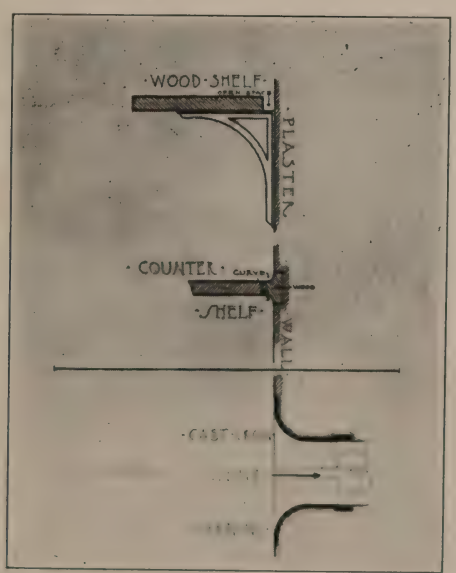
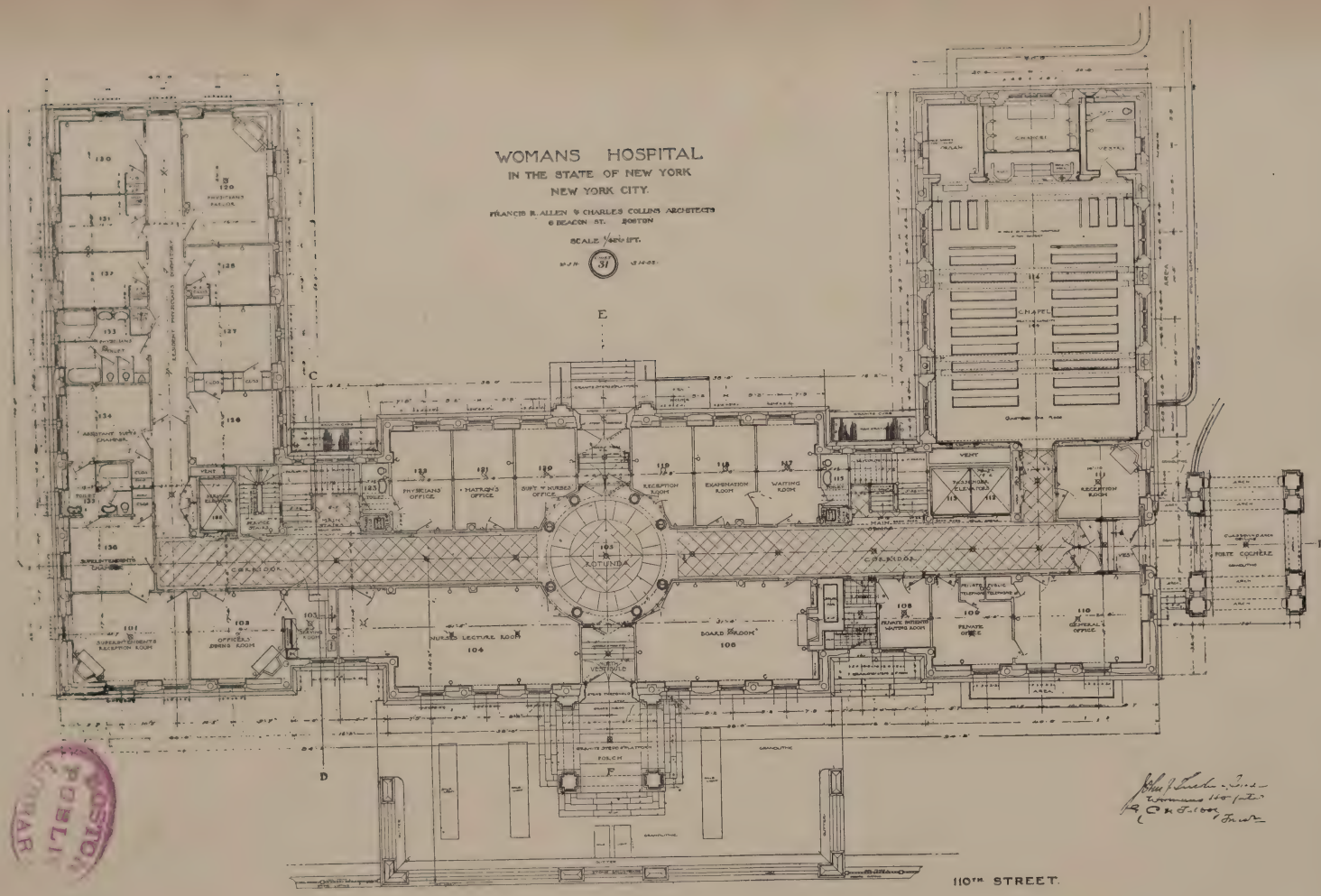


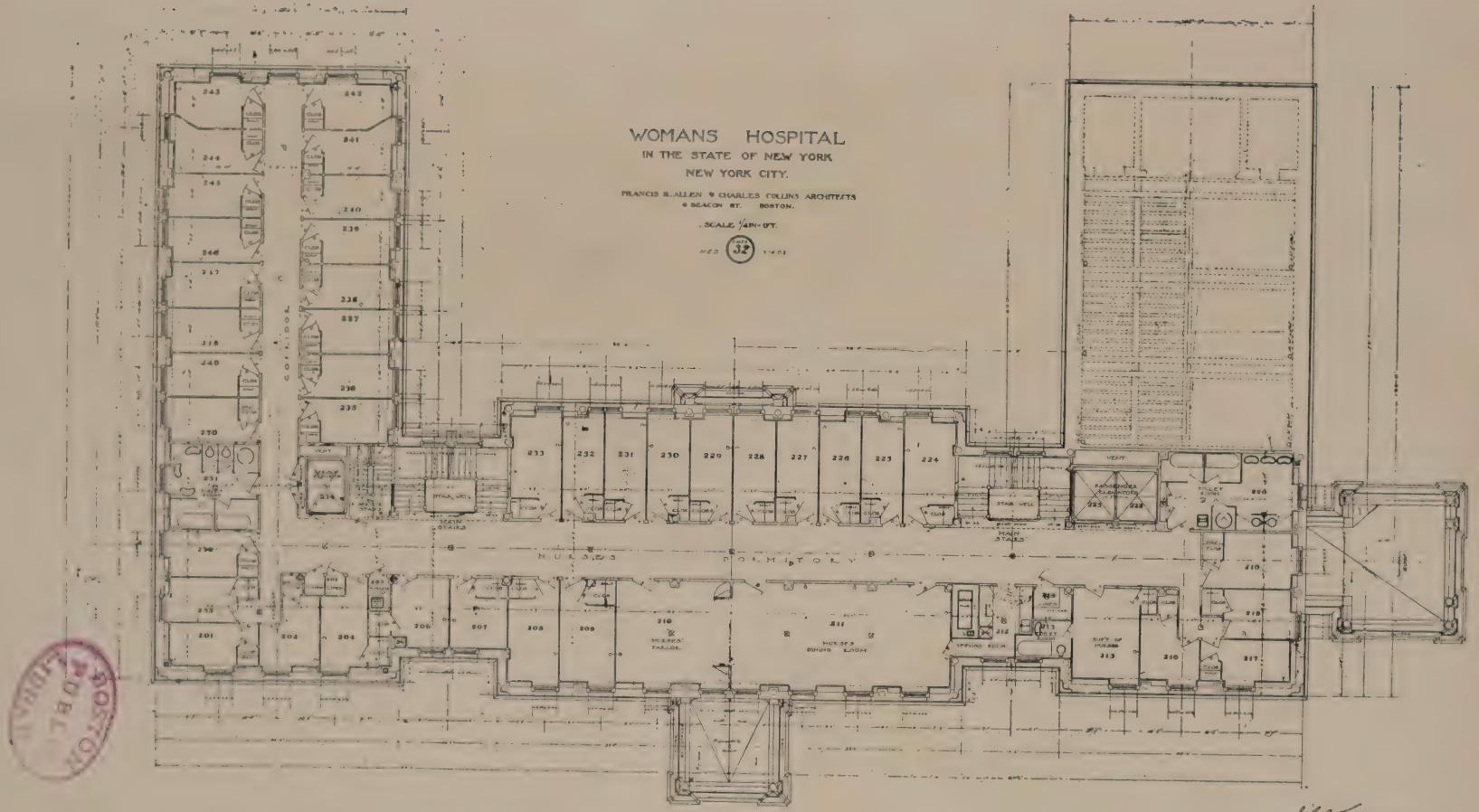
FIG. 5. SHELF AND VENT DETAILS.



THE WOMAN'S HOSPITAL—FIRST FLOOR PLAN.

The administration rooms, chapel, and physicians' quarters are on this floor.

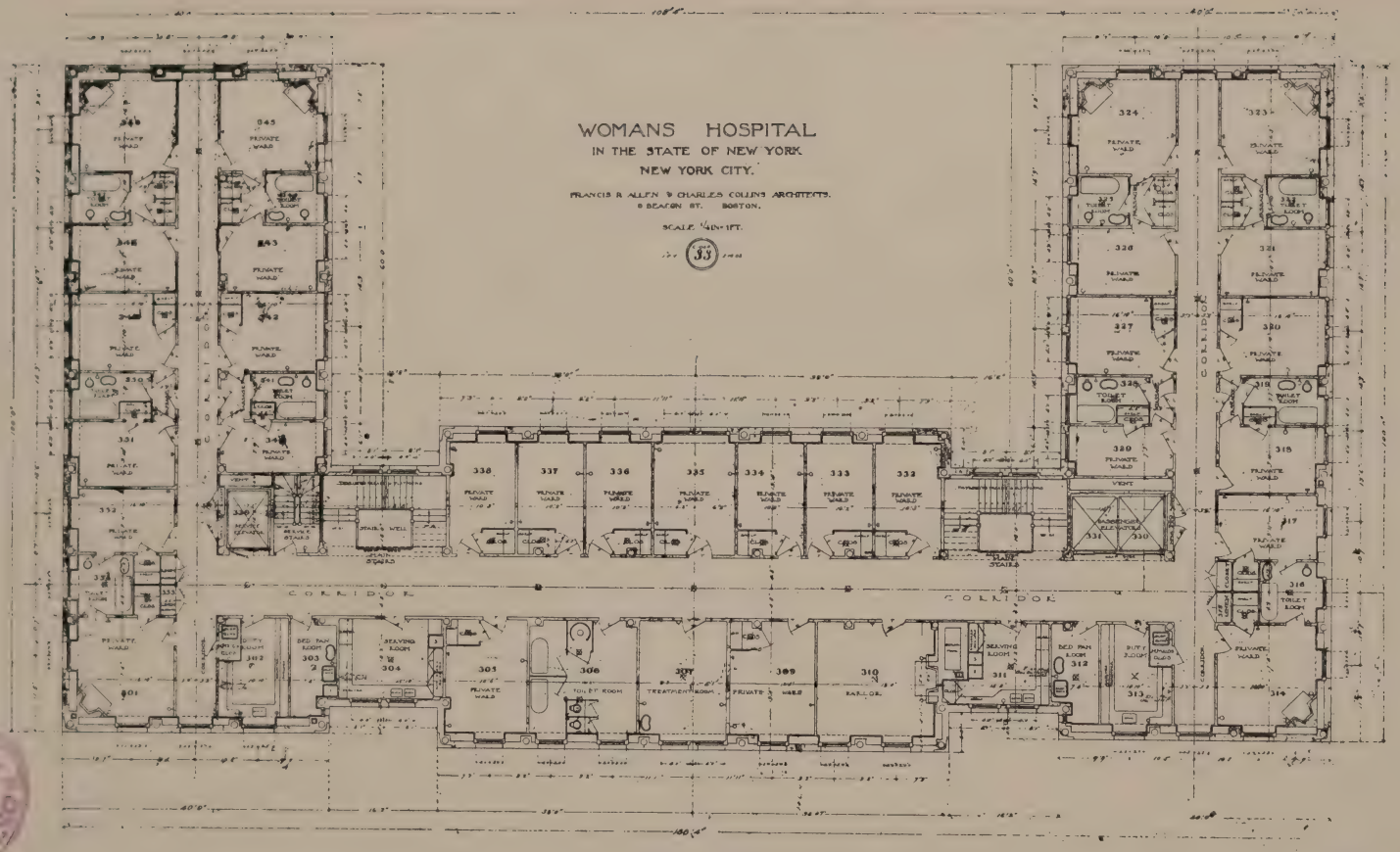
Cathedral Heights, New York City. Allen & Collens, Architects.



THE WOMAN'S HOSPITAL—SECOND FLOOR PLAN.
This floor is given up to the nurses' quarters.

Cathedral Heights, New York City.

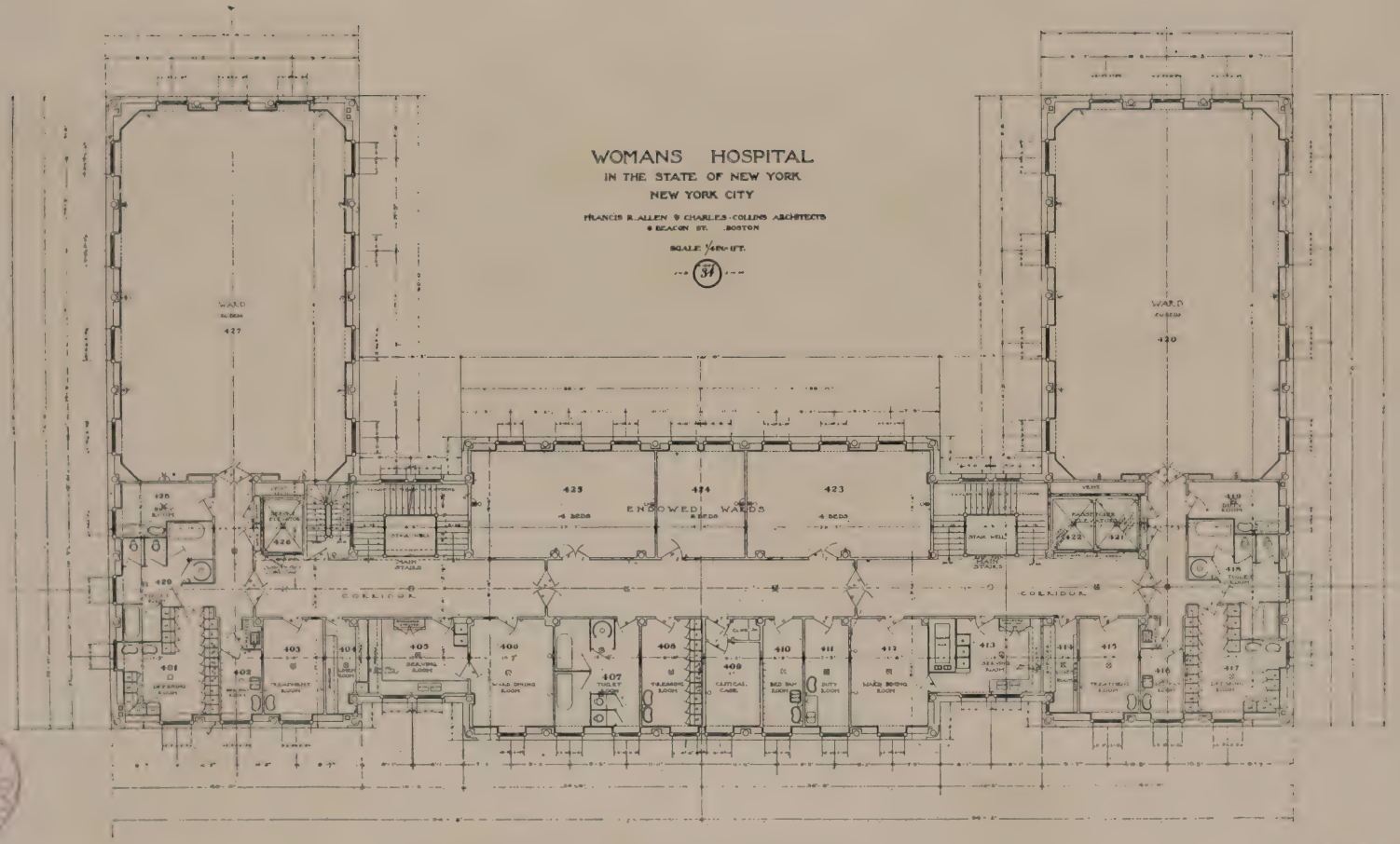
Allen & Collens, Architects.



THE WOMAN'S HOSPITAL—THIRD FLOOR PLAN.

The requirements of the private patients have been lavishly catered to on this floor.

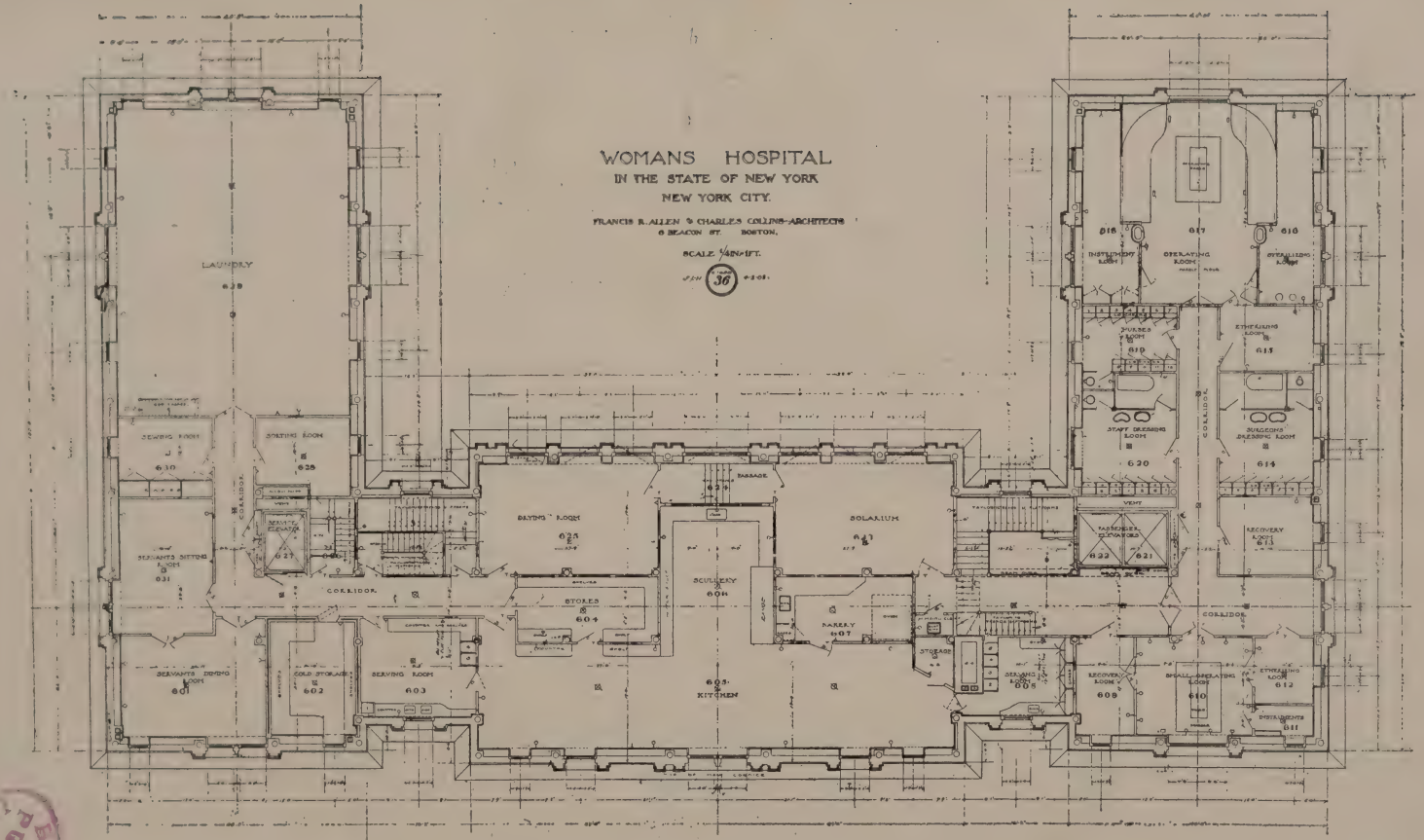
Cathedral Heights, New York City. Allen & Collens, Architects.



THE WOMAN'S HOSPITAL—FOURTH FLOOR PLAN.

Cathedral Heights, New York City. Allen & Collens, Architects.

Two large and one endowed ward with their services and dependencies completely occupy this floor.



THE WOMAN'S HOSPITAL—SIXTH FLOOR PLAN.

Cathedral Heights, New York City. Allen & Collens, Architects.

With the exception of a Sun Room for convalescents, this floor is entirely devoted to the disagreeable features of the hospital, the kitchen, laundry and particularly the operating room, which in this case has been completely isolated.

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Architectural Aberrations

The Church of Our Lady of Lourdes, New York

In a previous paper of this series, that upon the late Halsey Wood's Peddie Memorial Church over in Newark, we had to explain the classification of that edifice as an "aberration" by admitting that it was not necessarily to disparage a thing to call it so. The suggestion of "mental aberration" is not in all cases fulfilled. The dictionary definition of "a departure from the customary structure or type" will serve our turn, and that does not imply blame. In fact, architecturally speaking, a departure from the customary structure or type in the cases of some "customary structures" may be a highly desirable departure, and attest that the aberrant, so far from suffering from mental aberration, may be the only sane inmate of an overcrowded lunatic asylum.



THE ACADEMY OF DESIGN, AT TWENTY-THIRD STREET AND MADISON AVENUE, RECENTLY DEMOLISHED. THE METROPOLITAN LIFE INSURANCE COMPANY'S BUILDING NOW OCCUPIES THE SITE.

Premising thus, we trust we may go on to talk about the Church of Our Lady of Lourdes as an architectural aberration without making the term appear invidious. It stands in West One Hundred and Forty-second Street, within a stone's throw, or rather, since it is around the corner, within a boomerang's flight, of the new buildings of the College of the City of New York. It was, in fact, in the course of a visit to these buildings that the present investigator happened upon it, and was duly startled to find the old Academy of Design reproduced, or rather not reproduced but reappearing, some six miles away from the site on which it was erected with such startling results upon the beholders in the remote sixties. Truly, it is enough to make the beholder stare and gasp to see again this pioneer and relic of the Gothic revival as applied to secular uses converted to sacred uses. Surprise is asserted by some phychologists to be an element of humor. And certainly to one who knew, as what New Yorker knows

not, the building as it was, there is something humorous in finding it as it is:

> The stranger to the native turns
> And smiles betwixt them play.

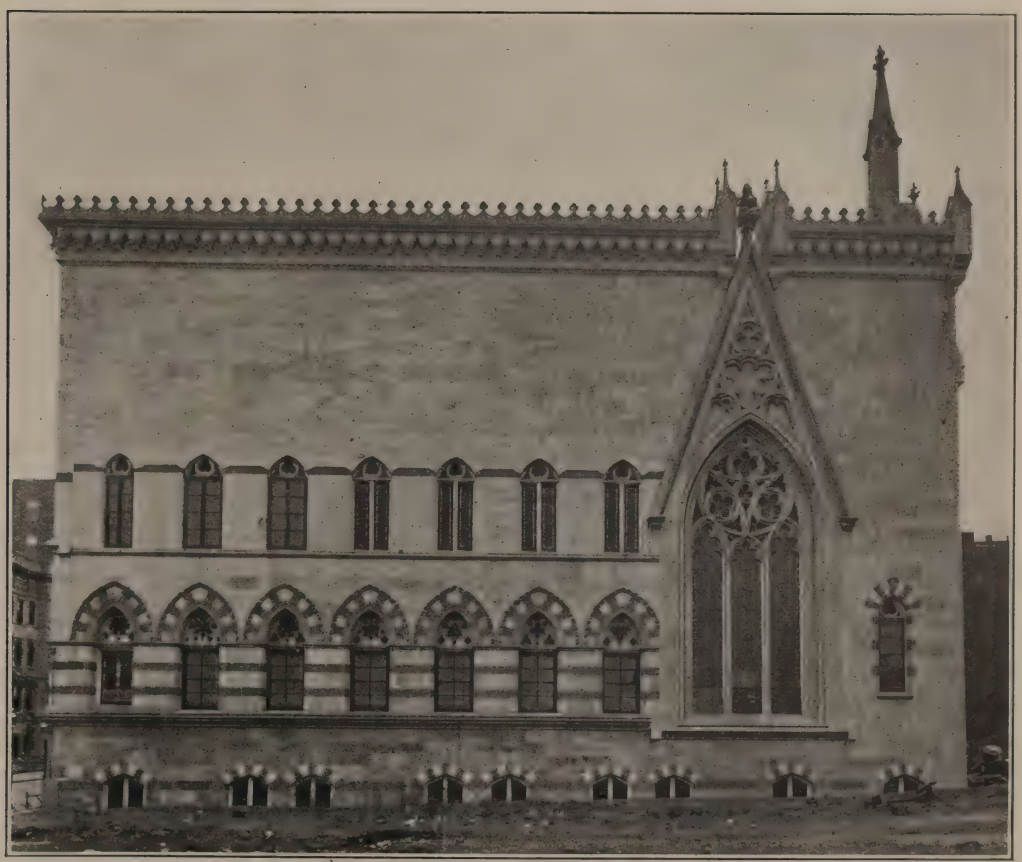
It may not be desirable that the first impression of a church should be that of amusement, or that one should describe his sensations in its presence by saying that it "tickles" him. This is undoubtedly, however, the impression made by the southern front of Our Lady of Lourdes. But that is only the impression made upon one who remembers it in its original and unconverted state, and will pass away as the front becomes more familiar in its new aspect and its new use, while it will never occur to a generation which knew not the old Academy of Design.



THE CHURCH OF OUR LADY OF LOURDES—FRONT ON 142D ST.
142d St., near Amsterdam Ave., New York.
(Photo by J. H. Symmons.)

Almost with the recognition of the old and admirable example of Venetian Gothic comes the recognition that it has suffered a sea change, and has been transmogrified as well as transplanted.

One presently misses the mosaic pattern of the blank upper story and the traceried bull's eyes which relieved its monotony. He misses the rich parapeted cornice, with the colored mosaics in its interstices, for which the cresting of the transmogrified front is a very imperfect compensation. He misses the crocketed canopy of the entrance, substituted by a plain triangular moulding, although the traceried bull's eye of the original reappears. He would, perhaps, be willing to miss the row of windows above the arcade, introduced evidently for the purpose of giving needed illumination to the interior, but of which the extreme plainness is emphasized by the contrasting richness of the arcade itself. He discovers that the frontage is less than that of the original, and that the entrance is thus deprived of its liberality of abutment, and the flanking windows are thus shorn of their fair proportions and huddled against the central feature. A plain "perron" is substituted for the rich balustraded double staircase. In fact, what has caught his eye and compelled his recognition of an old friend is but the arcade of the main floor of the Academy, with its alternation of white and black voussoirs and its traceried arch heads.



THE CHURCH OF OUR LADY OF LOURDES—SIDE OR EAST ELEVATION.
142d St., near Amsterdam Ave., New York.
(Photo by J. H. Symmons.)

Passing to the side, the reappearance of the arcade of the Fourth Avenue front of the Academy is again the familiar feature. Here also the arcade is again apparently crowded, and its nook shafts are again omitted, and, although the basement windows of the old building, with their segmental arches, appear

in a sunk story, the general resemblance is so much less "convincing" that perhaps one would not instantaneously recognize the original. Recognition is made more difficult by the appearance here of a feature rich and strange in a canopied window of tracery so strictly geometrical that one would incline to call it German Gothic rather than French, but which he presently recognizes as having originally adorned St. Patrick's Cathedral. The recognition is enforced by the rear of the church, which is so familiar as to be unmistakable. Then he recalls that the rear wall of the cathedral must have been demolished to make way for the memorial Lady Chapel, and that these are the spoils of the dilapidation. The demolition or the reconstruction has been more



THE CHURCH OF OUR LADY OF LOURDES—REAR VIEW.
142d St., near Amsterdam Ave., New York.
(Photo by J. H. Symmons.)

carefully and successfully done in this case than in the other, for the feature, the three arches with their buttressed pinnacles, is perfect and complete, while it would probably have cost more to quarry, transport, cut and lay its stone than the total cost of the edifice which it now adorns. Apparently the notion of preserving what could be preserved of the Academy did not occur to the re-

The elaborately carved buttresses that flank the terrace of steps on the southern front one finds to have accrued from the demolition of the Stewart mansion, afterwards the Manhattan Club, to make room for the Knickerbocker Trust, which is at present constituting so urgent a municipal problem. A zealous public official curiously holds that the public will regard him with great favor for



THE CHURCH OF OUR LADY OF LOURDES—INTERIOR VIEW, TOWARD THE ALTAR.
142d St., near Amsterdam Ave., New York.
(Photo by J. H. Symmons.)

edifier until the demolition of the upper part had resulted in its wreckage. It is a particular pity that the cornice and the canopy could not have been preserved, even though in order to make room for the central feature as it originally stood the flanking arches had been diminished from three to two on each side.

One finds that there are other elements in this curious architectural cento than the Academy and the Cathedral. shaving off to the innermost building line the portico which constitutes not only the chief ornament of the building, but one of the architectural features which partly redeem the chaos of the new, awful, Americanized and Judaized Fifth Avenue.

But it is not alone in the exterior that one recognizes old friends. In the vestibule there hang photographic acknowledgments of the obligations of the edifice, in the form of views of the Acad-

emy of Design as it was, and of the rear elevation of St. Patrick's as it was. But in the body of the church another old friend appears in the shape of the gallery fronts, which are not really gallery fronts, but only screens between the pillars of the nave, at the height at which galleries would occur if there were any, an old friend by no means so readily recognizable as the familiar local examples, and which one, or at least this one, has to inquire about in order to recall it. No wonder, for it appears that the idea of the decoration comes from the similar feature in the nave of that wonderful and fantastic blend of Gothic and Renaissance, St. Etienne du Mont in Paris. In that case, however, the rich Gothic is confined to the "jubé" and its wonderful spiral staircases, the feature from which this one is imitated being a classic balustrade between classic pillars. The detail of this decoration owes nothing to St. Etienne, but much to the florid sixteenth century work of the church of Brou en Bresse, and something to that of Margaret of Anjou. The shape of the exterior of Our Lady of Lourdes, and indeed, the site itself are not very eligible for ecclesiastical uses, at least for the worship of the Roman Church. So besides their potential practical uses as fronts of actual galleries, and their evident decorative uses, these feature screens serve what may be called an ecclesiological purpose in indicating a division between nave and aisles, and in an apparent lengthening of the form.

Upon the whole, the aberration is a commendable and even exemplary "departure from the customary structure in type." It is a pity, of course, that it should not have been practicable to reproduce the Academy in its entirety. If Mr. Wight ever revisits the glimpses of the metropolitan moon, and makes his way to the remains of his beautiful building, he would no doubt suffer over the truncations to which it has been subjected. But one imagines he would agree that it was more desirable, from the author's point of view, that it should be thus partially preserved than that it should be utterly destroyed. Certainly, from the point of view of the architectural pilgrim, looking for bits of beauty and picturesqueness in our street architecture, it is so. Such a pilgrim feels indebted to the ingenious and appreciative pastor, the Rev. Mr. McMahon, for a work of architectural as well as of devotional piety. It is quite plain that, by picking the architecture of his church off the scrap-heap, so to say, he has managed to get an edifice far better worth looking at than he could possibly have obtained at the same cost, or even at a considerable multiple of it, by building it "de novo." And one feels moved to commend his example to other clergymen similarly situated. There, for example, is the central building, including the chapel, of the Union Theological Seminary in Park Avenue, now doomed to demolition. It is one of the most noteworthy works in New York of the Gothic revival, and of its authors, Messrs. William A. Potter and James Brown Lord. Moreover, it is evidently better adapted to ecclesiastical uses than the Academy of Design, indeed, very readily adaptable to them, one would say. What a pious scheme it would be for some church to acquire and reerect it at a very small fraction of what its original erection cost, and a similarly small fraction of what a church or chapel of like dimensions and material with an equal proportion of carved work would cost now, the chances being very much against its being architecturally as valuable as this work of approved and established merit. It is to be hoped that the pastor of Our Lady of Lourdes may prove to be a pioneer. Whether he does or not, he is already a benefactor in the architectural way, as well as, doubtless, in other ways.

The New

Engineering Societies' Building

West 39th Street, New York City

HALE & ROGERS, Architects

H. G. MORSE, Associate

The

Residence

of

Mr. F. H. Goodyear

Delaware Avenue and Summer Street
Buffalo, N. Y.

CARRÈRE & HASTINGS, Architects





ENGINEERING SOCIETIES' BUILDING.

West 39th-Street, New York. (Photo by Alman & Co.) Hale & Rogers, Architects. H. G. Morse, Associate.



ENGINEERING SOCIETIES' BUILDING—STAIRCASE HALL.

West 39th Street, New York. (Photo by A. Patzig.) Hale & Rogers, Architects. H. G. Morse, Associate.



ENGINEERING SOCIETIES' BUILDING—CORRIDOR.

West 39th Street, New York. (Photo by A. Patzig.) Hale & Rogers, Architects. H. G. Morse, Associate.



ENGINEERING SOCIETIES' BUILDING—CORRIDOR.

(Photo by A. Patzig.)

Hale & Rogers, Architects.
H. G. Morse, Associate.



West 39th Street, New York.

ENGINEERING SOCIETIES' BUILDING—LECTURE HALL.
(Photo by A. Patzig.)

Hale & Rogers, Architects.
H. G. Morse, Associate.



ENGINEERING SOCIETIES' BUILDING—LIBRARY.



ENGINEERING SOCIETIES' BUILDING—THE LIBRARY. FROM THE ENTRANCE.

West 39th Street, New York. (Photo by A. Patzig.)

Hale & Rogers, Architects.
H. G. Morse, Associate.



RESIDENCE OF MR. F. H. GOODYEAR—DELAWARE AVENUE FRONT.

Delaware Avenue and Summer Street, Buffalo, N. Y. (Photo by Alman & Co.) Carrère & Hastings, Architects.

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RESIDENCE OF MR. F. H. GOODYEAR—SERVICE YARD AT THE REAR.

Delaware Avenue and Summer Street, Buffalo, N. Y. (Photo by Alman & Co.) Carrère & Hastings, Architects.



RESIDENCE OF MR. F. H. GOODYEAR—FOUNTAIN AND COURT.



RESIDENCE OF MR. F. H. GOODYEAR—THE GARDEN FROM THE HOUSE, TOWARD SUMMER STREET.

Delaware Avenue and Summer Street, Buffalo, N. Y. Carrère & Hastings, Architects.
(Photos by Alman & Co.)



RESIDENCE OF MR. F. H. GOODYEAR—VIEW FROM SUMMER STREET.
Delaware Avenue and Summer Street, Buffalo, N. Y. Carrère & Hastings, Architects.



RESIDENCE OF MR. F. H. GOODYEAR—CARRIAGE GATE ON SUMMER STREET.
Delaware Avenue and Summer Street. Buffalo, N. Y. Carrère & Hastings, Architects.
(Photos by Alman & Co.)



RESIDENCE OF MR. F. H. GOODYEAR—DETAIL OF MAIN FRONT.
Delaware Avenue and Summer Street, Buffalo, N. Y. Carrère & Hastings, Architects.
(Photo by Alman & Co.)



RESIDENCE OF MR. F. H. GOODYEAR—PORTE COCHERE.
Delaware Avenue and Summer Street, Buffalo, N. Y. Carrère & Hastings, Architects.
(Photo by Alman & Co.)



RESIDENCE OF MR. F. H. GOODYEAR—DRAWING ROOM.



RESIDENCE OF MR. F. H. GOODYEAR—BILLIARD ROOM.

Delaware Avenue and Summer Street, Buffalo, N. Y. Carrère & Hastings, Architects.

(Photos by Alman & Co.)



RESIDENCE OF MR. F. H. GOODYEAR—HALL.



RESIDENCE OF MR. F H. GOODYEAR—RECEPTION HALL.
Delaware Avenue and Summer Street, Buffalo, N. Y. Carrère & Hastings, Architects.
(Photos by Alman & Co.)



RESIDENCE OF MR. F. H. GOODYEAR—LOOKING INTO THE STAIRCASE HALL.
Delaware Avenue and Summer Street, Buffalo, N. Y. Carrère & Hastings, Architects.
(Photo by Alman & Co.)

NOTES & COMMENTS

ARCHITECTURE FOR CHINATOWN

A firm of San Francisco architects have recently had an interesting task assigned to them. The Merchants' Association requested Clarence R. Ward, of Meyers & Ward, to "develop a suggestion for the treatment of buildings in Chinatown that would be Oriental in style, suitable for corner and inside lots, adaptable to buildings already constructed, and that would conform to the building laws." The idea was not to obtain at this time an elaborate study, but a preliminary sketch that would show that a structure appropriately Oriental in style can be designed in compliance with present building ordinances. Describing his design, Mr. Ward says: "Deep reveals are shown on the windows into which quaint designs of screens or grilles may be inserted. Curved cornices and tiled roofs are also special features. The tiles may be of copper, which properly treated with acids will give beautiful green and brown effects. In more pretentious buildings, glazed tiling or terra cotta may be used, and with the addition of Chinese lanterns, whether of copper, brass, or even of paper, an effective adaptation of Oriental design to modern conditions will be obtained." For the walls he suggests rough brick or concrete treated with stucco and staff. It is an interesting enterprise on which, however, a good deal is to be said both pro and con, and which concerns not only architectural principles but some that are social, economic and civic. The illustration herewith speaks for itself.



A SUGGESTION FOR CHINATOWN, SAN FRANCISCO.

COLUMBUS COMMISSION

The City Council of Columbus, Ohio, having made an appropriation some months ago to obtain comprehensive plans for the improvement and beautifying of the city, the following commission has been selected: Architects, Austin W. Lord, of New York, and Albert Kelsey, of Philadelphia; civic expert, Charles Mulford Robinson, of Rochester; landscape architect, Charles N. Lowrie, of New York; and sculptor, H. A. MacNeil, of New York. The selections were made by the Board of Public Service, and the commission has lately held its first sitting, at which Mr. Lord was elected chairman and Mr. Robinson secretary. The plan is to study the situation very carefully to make an elaborate but practical report. It is believed that much can be done to make Columbus a worthier capital. Columbus follows in this enterprise the example of other capital cities, such as Harrisburg, Denver and Columbia, and of the national capital. The obligation is one that ought to be recognized generally.

RESTORING A TOWN HALL

The lively little village improvement association in Framingham, Mass., has undertaken an interesting and suggestive line of work in acquiring the custodianship of the town hall. The building is an old one, facing on the Common, and was once the centre of the town's life. But the railroad went through South Framingham, instead of Framingham, and business drifting thither the town hall was falling to pieces. The association plans to expend $4,000 on the structure's restoration and improvement. Then it designs to make it the social centre of the town's life—its own beautiful meeting place, and the rallying point for all sorts of good causes. In these days when there is so much theoretical talk about civic centres, an improvement society can do no better than thus develop the usefulness of a neglected town hall, nor is there more appropriate subject for its activity. In the rescue some years ago of a lovely "Wren" spire, which had been struck by lightning and was threatened by a more blasting demolition at the hands of "improvers," the Framingham society has already proved its good sense, its loyalty to high ideals and respect for a worthy past. New England town societies may note that to do this sort of thing is better worth while than even to clean up back yards.

NEW CONNECTICUT ARSENAL

The report, recently issued in pamphlet form, of the Arsenal and Armory Commission of Connecticut, is of more general interest than its title might suggest. This is because it records the progress, the very satisfactory progress, in a remarkable enhancement of the handsome setting of the Hartford capitol. The story of the arsenal and armory location is a long one and an old one. It will be recalled that the building was to have been put on the side of a business street; that the protests of the Municipal Art Society, of the city engineer and of many citizens were unheeded; that the citizens, under the leadership of the city engineer, F. L. Ford, kept right on fighting, conducting a campaign that enlisted the assistance of many in other States who care for the cause of city beauty; and that at last defeat was turned to victory. Connecticut purchased the old round house site and railroad yards which adjoined the capitol park, and tracks and round house have now been removed. The plot has been graded and planted, making a noble addition to Bushnell Park; the plans for the new structure, which will handsomely frame the park on this side, have been accepted, and work is beginning. Not only are there additions, beautiful, imposing and dignified to the capitol's setting; but these qualities are substituted for what was before incongruously hideous. As to the plans for the arsenal, a competition was held in which twenty-one architects took part; and the plans selected are those of Benjamin Wistar Morris, of New York.

A LESSON FROM SOUTH AMERICA

One result of the conference of American Republics last summer, and of Mr. Root's long trip, has been a considerable increase of popular knowledge regarding the South American cities. All through the winter there have been a succession of magazine articles by one correspondent and another, and a collection of exceedingly interesting and illuminating photographs. Of course to a few persons the majesty of the South American city has been no new story; but to a great many others—American taxpayers, voters and city officials—the revelation that cities of South America are far ahead of ours in beauty, dignity and general up-to-dateness has come with something very like a shock. And it is a shock that is sure to do us good. It can hardly fail to

push along the improvement spirit now strong in the land; to give greater courage, confidence and hope to those who are planning for better urban conditions, and to convince the architect that his day of opportunity is just beginning. The European examples have been before us so long that they have lost effect. But here are cities which most persons had thought of as not half as good as our own, that prove to be finer than most European—and on our side of the ocean! No wonder that men sit up and take notice. Descriptions and pictures have found their way into almost every thinking household, and by the novelty of their subject have demanded attention. Such views as those of the new boulevards of Buenos Aires, of the Avinida Central at Rio de Janeiro, and of the esplanades on the shore of Rio Bay; descriptions of how the Avinida, over a mile long, a hundred and ten feet wide, superbly illuminated, paved with asphalt, and lined with costly buildings, was thrust through the heart of the old town and completed in eighteen months—how all this is done not by imperial ukase, but in a republic—these stories are not going to fall on dull ears. We have ambition and wealth and enterprise. And when American architects do come into their opportunity, it will be so splendid, and will come so swiftly, that they will hasten now their preparations for it.

AWAKENING OF OAKLAND

There has been a fine awakening of public spirit in Oakland, Cal. It is not easy to set the date of its beginning, or to ascribe with confidence the first cause, but it is clear, even to its own citizens, that within a year the whole mental attitude of the citizens has changed. And there was room for improvement; in the development of public spirit the city has simply come into its own, into the frame of mind which there was every reason for Oakland to have. The first public manifestation of the change was when the administration employed a civic advisor last spring to make a report on what could be done for the city's improvement and beautification. But obviously the beginning of the changed attitude preceded his visit, or he would not have been employed. Before his report was completed, there came the great earthquake. San Francisco was destroyed, scores of thousands of people poured into Oakland, real estate values jumped, business vastly increased, and an immense permanent addition was made to the city's population. The greater Oakland began to be a visible reality. Then came the report of the adviser, just at the moment when people were asking what they should do to grasp the opportunity. Large expenses were contemplated; but Mayor Mott stood loyally by the recommendations, and his practicalness, his civic ideals, and the general confidence in him have been perhaps the most potent factors in the city's awakening. The report, which had been published in full in the newspapers, and earnestly supported by them, was put into pamphlet form; the Chamber of Commerce, the Merchants' Exchange and the civic organizations endorsed its recommendations, and the people were asked to vote for an issue of a million dollars worth of bonds to make the most pressing of the park land purchases it advocated. As election day, Jan. 14, approached, the leading business and industrial houses promised their employees an extra half hour, so that all might vote; the adviser, who was in the East, wrote an open letter to the citizens appealing to their loyalty to Oakland, and in an extraordinarily heavy poll the bonds were authorized by a vote of five to one. Within a few hours after the result was known, a large fund had been started to advertise the city, and Oakland seems to have taken the place it ought long ago to have had—in a turn about that would not have seemed possible twelve months ago.

TAXES AND CITY BEAUTY

It is the interesting suggestion of Frederic C. Howe, made in a recent article in Scribner's, that the beautiful city of the future is to be the American city. There are not a few considerations that may be called philosophical to encourage this belief. Such are the recognition of the high general average of our American intelligence and the fact of our ambition, our wealth, and our freedom. Each one of these conditions is favorable. But Mr. Howe based his argument on none of them. He was dealing with such material realities as methods of municipal taxation, and in a comparison of the American and the British city found everything in our favor. "Our cities," he says, "are embodying their ideals in fine monuments, just as the pepole of the middle ages embodied their religious aspirations in splendid Gothic cathedrals. We are showing a willingness to pay for fine architecture, for beauty in the concrete. The English city, on the other hand, is the ugliest city in Europe. There are a few exceptions—such as Edinburgh and Dublin—but they are not

in England. Within the past few years, the London County Council has done some big things; but it is the most democratic body in Great Britain, and London cared little for beauty until it became democratic. As a rule, the cities of Great Britain have been very indifferent to adornment. They reflect the fear of the rate-payer. The city is unwilling to commemorate itself in a beautiful way. It is tyrannized over by the taxpayers. It dares not incur expenditure for the superfluous luxuries of city life. The American city, however, gives promise of being beautified in the next generation far beyond present indications. It is along these lines that our cities will first attain municipal consciousness." This he finds due most largely to "the aspirations of democracy for a big commercial life." But, in addition, he notes that "our streets are broader and finer, our architecture more promising, in spite of the skyscraper." It is no small matter in this connection that our method of taxing land at its present assumed capital values makes city taxes so high that an owner must improve the land or sell. He cannot leave a shack where an office building should be erected, and in consequence our cities are constantly rebuilt and always more substantially and at larger outlay. In England the shack is taxed only on its rental as a shack, and the land, if vacant, is not taxed at all, so that one does not have to sell. One can hold without improving. These fiscal considerations are of a good deal more importance to architects than most of them have stopped to think. As to continental, and especially German, cities, which just now are studying the science of city building with good effect, there can be no question that in the long run a public art which comes from the people themselves will far outstrip that which is fostered. Though in this discussion Mr. Howe confined his comparison to British cities, this fact sweepingly supplements it.

THE FUNCTION OF THE ARCHITECT

Despite the architect's continual clamor for professional recognition he seems to be working with all his might in a diagonally opposite direction. He is no longer the scholar of a half century ago, and tends more and more to force to the fore the purely business side of his activity, at the expense, it would seem, of what he is ultimately striving after—respect and confidence to advise in matters where business skill cannot, after all, avail of much. Not that business is a thing apart from art as expressed in the architectural profession, or that the architect should take as little stock as possible in purely business considerations, but he should first and foremost have his client's confidence to create in a way consistent, of course, with all the conditions of the problem. We mean to say, for example, a client comes to you, an architect, and says: I want to build a house about so and so, and I have so much to spend on it. He will, let us say, describe to you something which you tell him cannot be done for the sum at his disposal. In this connection the architect's business ability, his knowledge of prices of materials and labor come into play. This information should always be at his fingers' ends. We do not mean by this, however, that the architect should know everything about materials, labor, etc., just as each contractor does in his particular line, but he must be able to say to a fairly accurate degree what things will cost and how they had better be carried on. It is precisely such a knowledge of engineering that the architect should possess. He should be acquainted with the laws of mechanics, the principles and assumptions in the graphical statics as applied to building, and the engineering nature of his problem with its possible alternatives. He should not pretend to be an engineer, which is a life study by itself. That would be a fraud as great as if an engineer should pretend to know all about the architect's duty and proclaim himself just as competent as the latter to arrange, create, adjust and dispose, in the artistic sense of the word.

Again, the architect is commissioned to prepare drawings for such and such a house which the client imagines he sees in his mind's eye. But does the client really see any one definite and distinct house, or has he only in his mind many confused notions of various features that he imagines are going to combine and please him? Granting that the architect understands his client, he, the architect, must be ever after to the completion of the task the absolute judge of how all these projected things are going to come out. But, as a rule, this admirable perfect understanding that should exist between the two parties seldom materializes, and consequently there is occasional trouble. The architect credits his client with either too much or with to little ability to comprehend and to picture what he himself sees as plainly as daylight, or the client refuses to accept the architect at his true value, as the one person whom he has chosen to give concrete expression to certain ideas that he, the client, has formed as a result of the complex circumstances of his existence.



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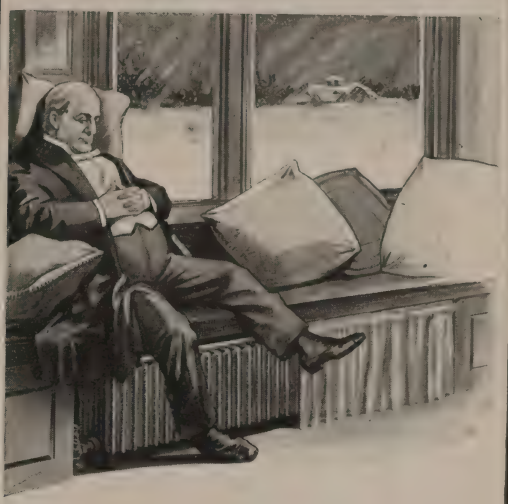
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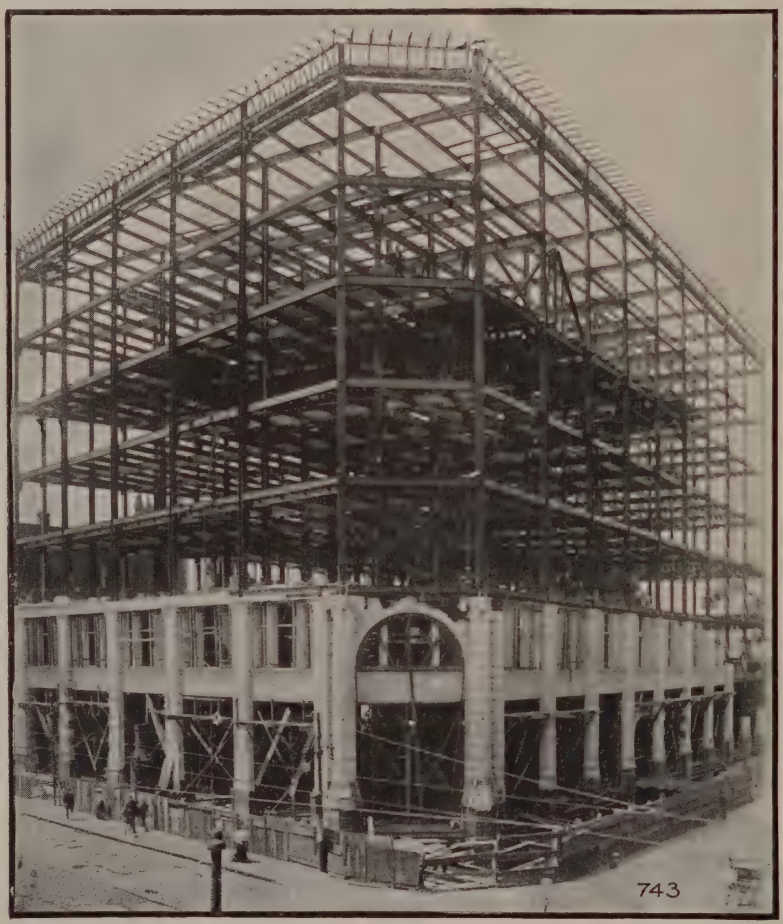
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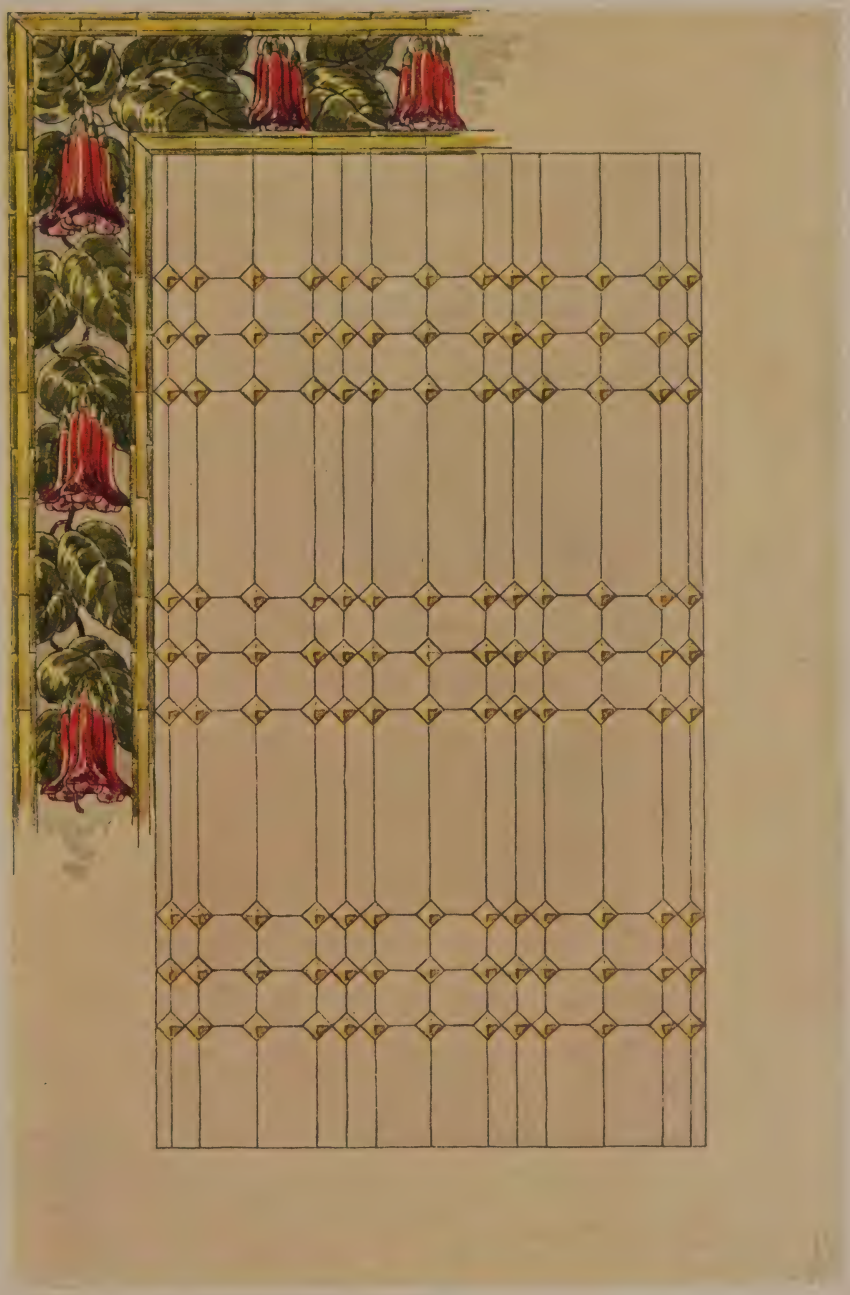


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Vol. XXI MAY, 1907 No. 5

American Schools of Architecture

1. Columbia University

The Teaching of Architectural Design

The study and teaching of architectural design are the crowning function of any school of architecture. This does not necessarily mean that design comes either earliest or last in the order of time, nor that it necessarily takes up more hours than all or any other subjects of instruction. All other subjects are, however, in varying measures subsidiary to it. The architect is rightly supposed to be and should always be first and foremost an artist in buildings; that is to say, a creator of beauty in the composition and harmonious arrangement of all parts of an edifice. He is thus very much more than engineer or builder, and the art which he practices is a fine art and not merely a useful one.



A CUSTOMS STATION AND LIGHTHOUSE ON THE GREAT LAKES.
(Advanced Design.)

But for the very reason that excellence in design is so largely a matter

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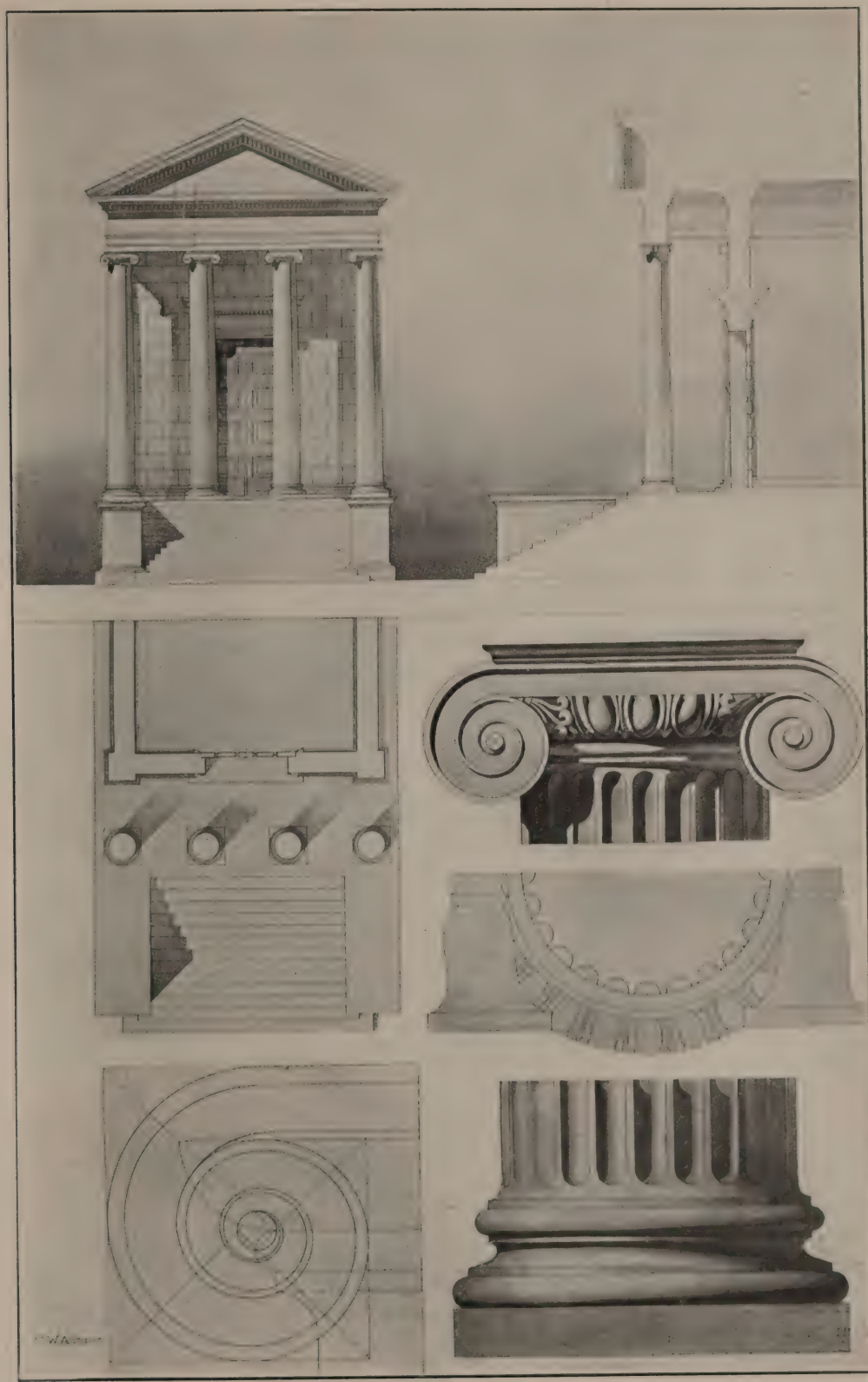


A STUDY OF WINDOWS.
(Applied Elements: First Year.)

of feeling, inspiration and taste, and that feeling, inspiration and taste cannot be communicated by text books nor by lectures, nor acquired by means of mathematical formulæ or scientific deductions, the teaching of design is one of the most delicate and difficult of all educational problems. The architect is not merely an artist, dealing with lines, forms and colors under the sole dictation of his imagination and handling absolutely free and plastic materials at every point as he will. He is also a scientific builder; he deals with rigid materials which must be handled according to the laws of statics, and with practical requirements of convenience and salubrity, which it is his first duty to meet in the most perfect manner. Although the artistic design of his building is, in one sense, the most important and the crowning phase of his whole work, his earliest attention must be given to utilitarian and practical considerations. This is why there have been so many systems devised or attempted for the teaching of design and so many different opinions held as to the relative importance of different studies in the architectural curriculum. Some would make design—that is to say, the actual working out of plans and elevations on paper—the chief part of the course in such a way as to subordinate to it all the practical and technical studies, relegating the mastery of these branches to the architect's office rather than to the class room. Others, on the other hand, would lay the chief emphasis upon the technical and theoretical studies (including the history of architecture and the styles of ornament), giving these the chief importance in the curriculum, as the solid foundation of knowledge and culture upon which the designer must build up his handling of materials and forms. They would leave the acquisition of skill in design to be obtained through the experience of actual practice, believing that the knowledge and good sense resulting from a thorough course of technical study will suffice to direct his subsequent efforts in design. The majority, however, of the schools of architecture, both in this country and abroad, have adopted the principle of carrying the two divisions of the stu-



ENTRANCE, SCHOOL OF MINES BUILDING.
Columbia University, New York.
(Architectural Drawing: Measured Work, First Year.)

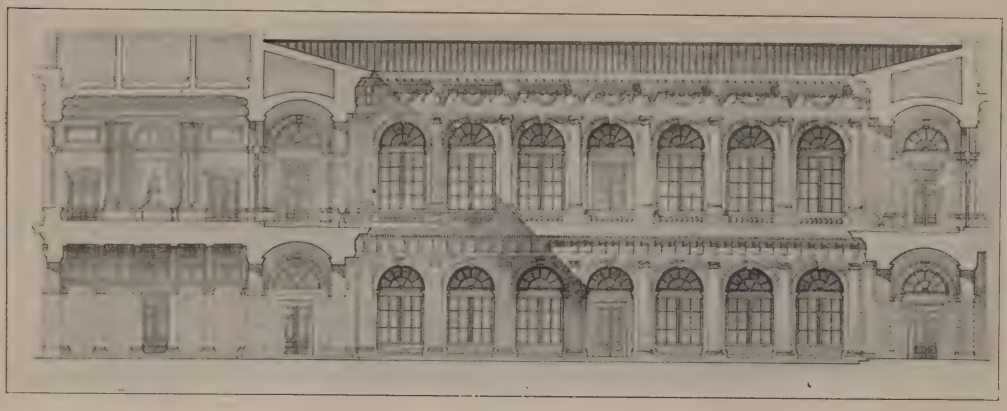


AN IONIC PORCH.
(Applied Elements: First Year.)

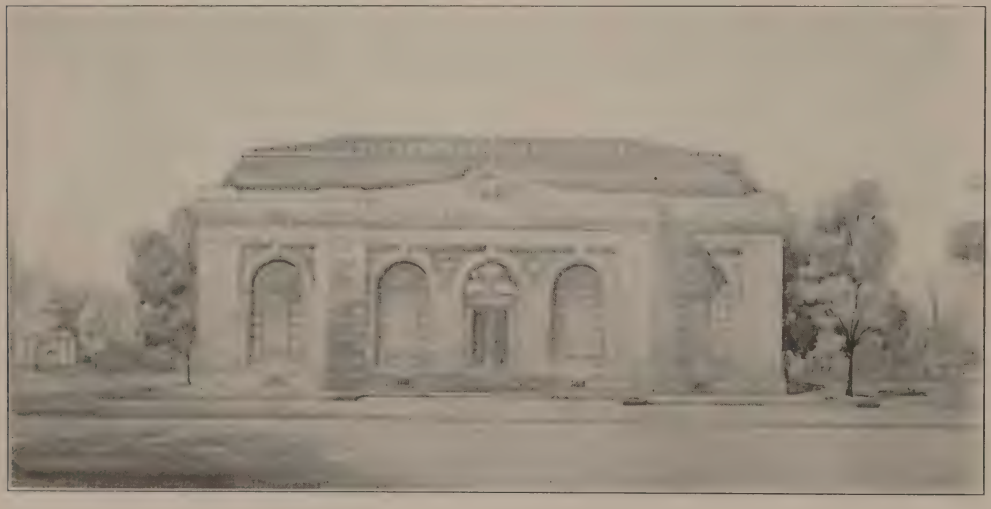
dent's work along in parallel courses, so that from the beginning he may be continuously engaged in exercises in artistic design while carrying on his studies in the class room in the more technical and theoretical branches of the course. By this means he is constantly reminded that neither part of the work is independent of the other, and that by thus alternating between the artistic and the practical he is being trained for the similar constant alternation between, and parallelism of, the two kinds of work in his actual practice.

Leaving aside, however, the discussion of the relations of time and importance between the specific work in design and the scientific and theoretical work of the class room, we find in the administration even of the actual work in design the greatest possible variety of methods and ideas.

This variety exists in spite of the fact that all our schools have practically settled down to the general procedure long ago instituted by the department of architecture of the School of Fine Arts in Paris: the system, that is, of dictated programs for specific problems to be worked out in competition by all the students of a given class, and to be judged and criticised by the instructor or by an



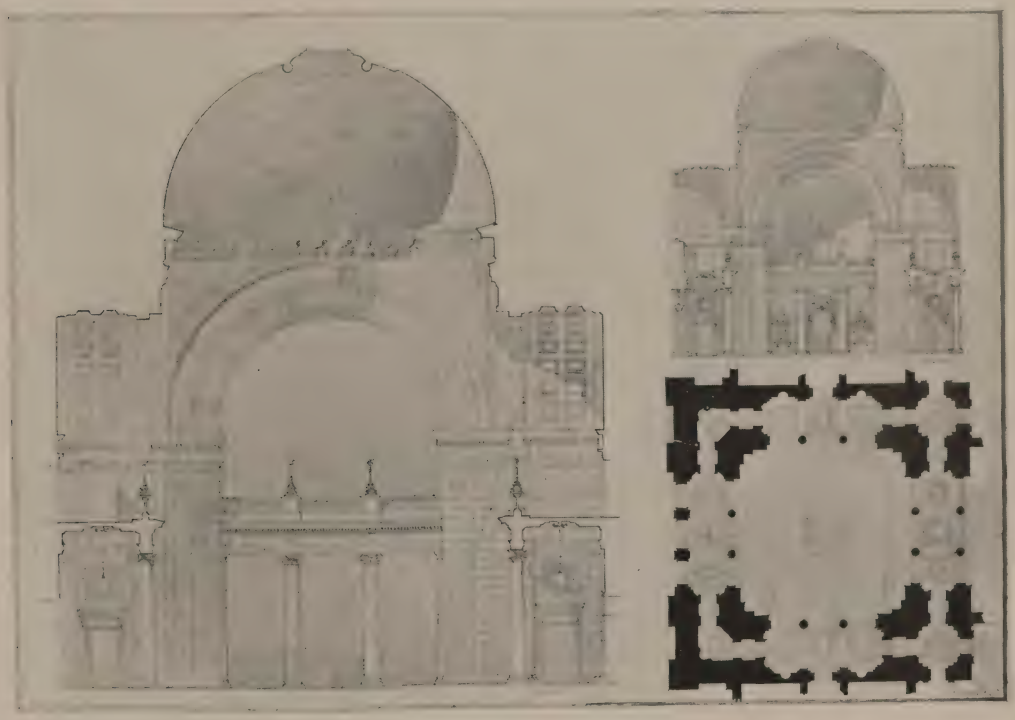
A COURT ARCADE.
(Elementary Design.)



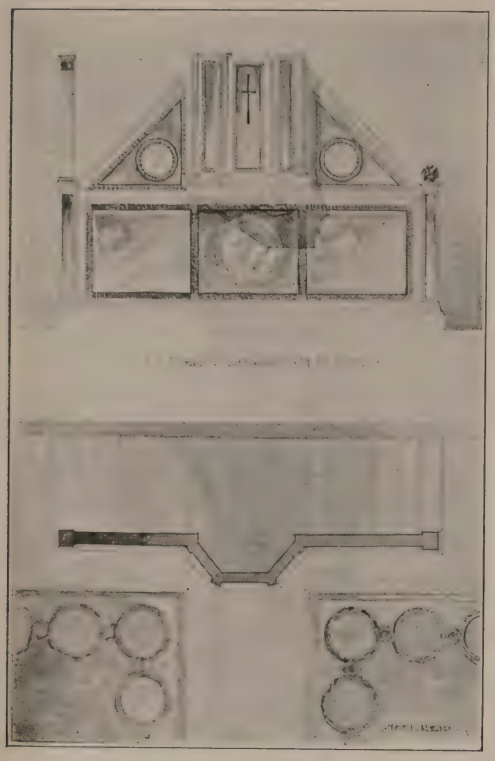
A SMALL POST OFFICE.
(Intermediate Design.)

official jury. This is, however, a mere skeleton of procedure and questions of the greatest variety present themselves in its administration. What shall be the subjects of the various problems in design? How shall they be related to each other? To what extent should they on the one hand resemble the particular problems which come up in ordinary practice, or on the other be of a purely theoretical and ideal character? In what manner should they be studied and presented? What importance should be given to draftsmanship, to the rendering of the design? What place should be given to problems of design in the various historic styles? How should the work be divided between elaborate problems, requiring several weeks for their solution, and sketch problems furnishing practice in rapid composition and delineation and lasting but a day or two? How large a proportion of the entire time allotted to design is it wise to devote to the study of architectural details? To what extent, if at all, should engineering calculations and the working out of strain sheets or of working drawings be introduced into or made to combine with the various problems? These are but a few of the almost innumerable questions that present themselves to those who must organize and direct the instruction in design.

One answer suggests itself at the very outset in reply to these multitudinous questions. "Art is long and life is short." It will never be possible to crowd into the longest period which the most patient student would be willing to devote to his studies even a tenth part of the desirable kinds of discipline in design. Different schools might each adopt an entirely different series and kind of problems representing different answers to the above questions, and each be exactly as good as the others. As a matter of fact, all the solutions adopted in the schools are compromises, and the difference between them is not therefore

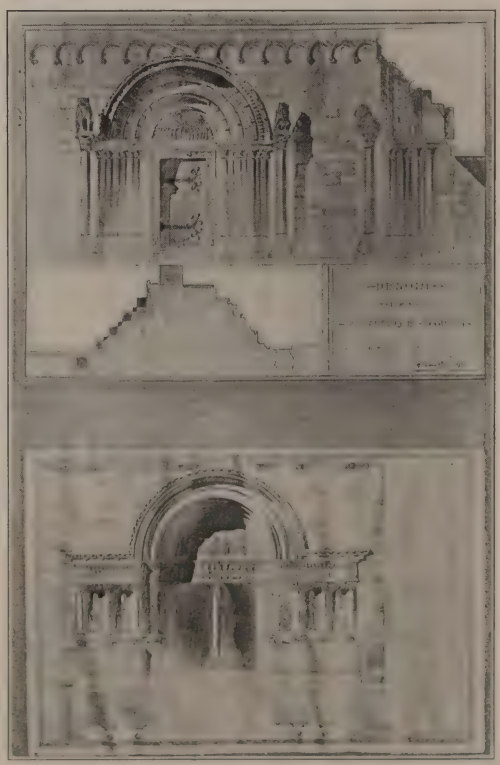


A ROTUNDA IN A PUBLIC LIBRARY.
(Advanced Design, First Problem, 1904.)



AN EARLY CHRISTIAN PULPIT.
(Studies in Mediaeval Styles.)

as great as one might at first expect. Perhaps the greatest difference among the American schools (among these I include, of course, the very extensive work done under the Society of Beaux-Arts Architects) will be found in the differing relative importance assigned to draftsmanship and presentation on the one hand, and to what might be called pure design—that is, to planning and composition, on the other. Next to this difference is that which distinguishes the schools which seek to give a somewhat practical turn to the training in design from those which treat it as a purely artistic exercise intended to develop the imagination and the artistic sense of form and proportion. No one of these schools claims to have solved the problem ideally. In all there is recognized the difficulty of determining whether it is best to graduate men trained for immediate usefulness in the architect's office, or, on the other hand, men who, knowing less on graduation than the former of the methods and devices of the office, are on the other hand, better trained intellectually, and by reason of broader culture may be expected to find themselves at the end of a few years far in advance artistically of those whose training was more immediately practical. There is, however, far less diversity of opinion on this point than was formerly the case. A substantial unanimity of sentiment has been developing in favor of the broader view, which looks beyond the earlier years of office-apprenticeship which every graduate must pass through, and plans for the highest development of his powers in his maturer work. The trade-school conception in the teaching of design is fast disappearing from our more important institutions. The elements of office-drafting are, however, taught in certain evening schools, as, for instance, in many Young Men's Christian Associations. Such schools serve to prepare



ROMANESQUE DOORWAYS.
(Studies in Mediaeval Styles.)

young men employed in the trades to understand architects' drawings, and to fit boys to enter the lowest grades of employment as draftsmen in the offices, but they are in no sense schools of architectural design.

There is, on the other hand, a widely prevalent notion among the younger draftsmen throughout the country that the only thing needed to complete their training in design is to work out design-problems. Failing to recognize that the art of design requires a solid foundation of knowledge, technical, historical and theoretical, with light heart and great enthusiasm they join existing *ateliers* or organize new ones, fancying that when they have acquired a certain number of "values" in the various grades they have accomplished their education. Not all who work in the *ateliers* are under this mistaken prepossession, but many of them are. Some of these learn their mistake in the course of a few years, and regret that they began their training in design at the wrong end. Some of them, indeed, finally enter the great schools as special students, or even as candidates for a degree. Not a few, however, discover the inadequacy of their training only to lament it, while others never discover it at all.

This does not mean that work on design-problems is, even for these men, wasted effort. The devotion, self-sacrifice and enthusiasm with which they pursue their purpose is wholly praiseworthy and beneficial, and they certainly gain much in resourcefulness, skill and taste in composition and delineation. They are likely, however, to get into a habit of overestimating mere cleverness, especially of rendering; they often mistake tricks and mannerisms for excellences, and fail to grasp any broad fundamental principles either of planning or composition. Much, of course, depends upon the master or teacher of the *atelier*,



BYZANTINE COLUMNS AND SPANDRELS.
(Studies in Mediaeval Styles.)

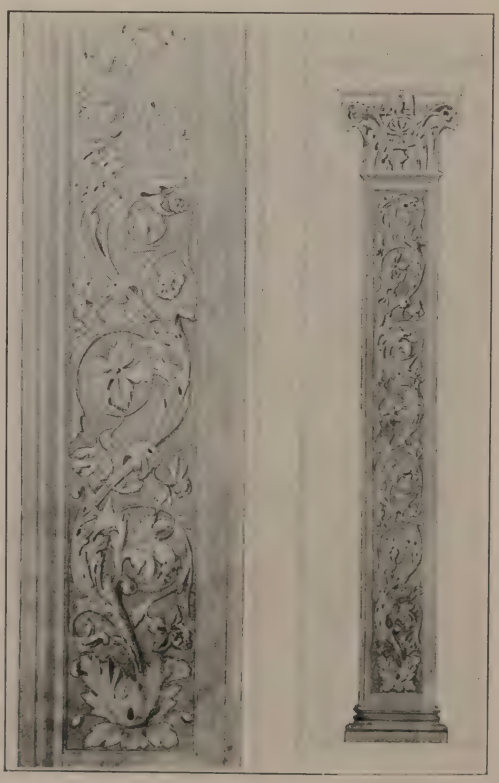


A MONUMENTAL DOOR AND DOORWAY.
(Advanced Design, Six-day Problem.)

and much on the juries who award the values; but there is always lacking the back-ground of a sound previous education. What is needed to supplement the work, excellent as far as it goes, of the *ateliers* of the Beaux-Arts Society and similar institutions, is a system of courses in mathematics, construction, history and theory of architecture, under the same institutions or under the direction of the great schools, so conducted as to be available for draftsmen after office-hours. How far the draftsmen would respond to such opportunities depends upon how far they feel the need of such training. Columbia University has for three years offered a course in architectural history, running through two years, at the end of one afternoon per week for thirty weeks of each year; thus far, perhaps, because the hour is inconvenient, but six draftsmen have attended it. But the University is taking steps towards the organization of evening classes for draftsmen, and another year may see these in operation and well attended.

II.

Design, in architecture, is a form of expression. It is a language, of which the words and letters are the structural and decorative features and details; the thoughts to be expressed are the ideas and conceptions in the designer's mind. These conceptions are in part suggested by the conditions of the problem; for the rest they must spring from the accumulated store of impressions previously received into the mind, recast and recombined by the imagination. There can be no creative imagination without materials to work upon; these materials must be acquired in some way, and to impart these is one of the objects of an architectural education. The study of architectural history, of photographs and books, and of the monuments of the arts themselves, both at home and abroad, is the chief means to this end. The function of the problems in design is to stim-



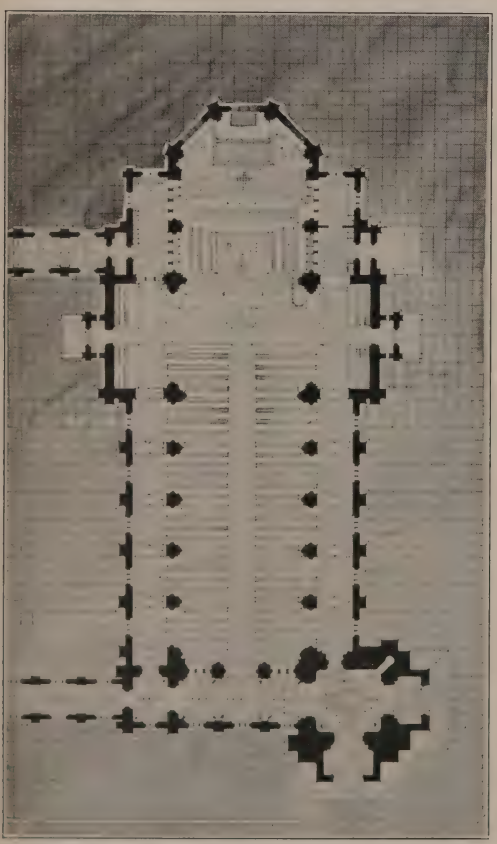
AN ARABESQUE PILASTER.
(Studies in Renaissance Styles.)

ulate the imagination to a creative use of these materials as distinguished from mere repetition and imitation. The student must then be taught to give expression to the new conceptions of the imagination: to externalize them, as the French say. But in order to express these he must have suitable means of expression. He cannot invent these out of hand any more than he can invent a new language or a new alphabet. Even if he could, the new language or alphabet could never serve his purpose as the old ones can, not only because no one but he could understand it, but also because it takes long periods to perfect a language as a means of expression; centuries in the case of a spoken language, decades at least, and sometimes centuries in the case of the languages and alphabets of architecture. The historic styles are the perfected languages of architectural expression, the forms and details of these styles its words and letters. To master one such style thoroughly, so that the designer can think his architectural thoughts out freely in terms of that style, is a valuable achievement. The orders of classic architecture provide a language and an alphabet that have been wrought out to the utmost degree of perfection and flexibility by long centuries of accumulating experience. This is why they have been adopted in nearly all schools as the first step in the course in design; not that the designer may ever after work with them alone, but that he may be provided at the outset with a means of expression already elaborated almost to a finality, and withal, like the Roman alphabet, clearer and simpler than any other that the world has seen. When the designer has developed measurably by this means his powers of architectural thought and expression he begins to be in a position to appreciate other forms or styles and to profit by them. The study of styles through the medium of architectural history is a step towards the enlargement of his resources of expression, but it is a question how far, during his academic schooling in design, it is desirable for the student to practice the use of these styles. To many instructors this period of schooling appears too short to permit of extended essays along new paths. It seems, indeed, inadequate even for a really thorough discipline in the use of the more familiar forms. The question brings up the old controversy between intensive and diffusive educational programs. In most of our schools a concession is made to the demand for variety of experience and the broadening of the taste, by providing in the more advanced stages of the work in design a limited number of problems calling for or permitting the use of the various historic styles, as in a Gothic church, a Moorish casino or restaurant, or a Greek tomb or crematory. But the fundamentals of design are independent of the historic styles: proportion, massing, fenestration, distribution of light and shade, scale, expression—these so far as the exterior is concerned, and planning as the foundation of all design. Decoration and the details of design are secondary to these essentials, but they are important. They should enter into any scheme of instruction in design, but in what precise proportion it is hard to say. They may be taught by means of special problems in the regular schedule of the design-course, or by means of parallel collateral courses of instruction. In Paris there are special prize competitions in decorative design, like the Rougevin, supplementing the regular design problems. In some schools, as at Columbia, much is made of special courses in historic ornament, with accompanying exercises in decorative architectural design in the various styles treated of in the class room.

But since architectural design is not a matter merely of abstract composition in form and color, but of the creation of buildings which must be put together on scientific principles, the teaching of design must in some way be related to the teaching of scientific construction. This raises the question as to how this relation shall be recognized. The student might be required to prepare structural details or working drawings of parts of each design-problem given out, but this would consume more time than can be generally allowed for these problems.



AN EPISCOPAL CHURCH: ELEVATION.
(Advanced Design.)

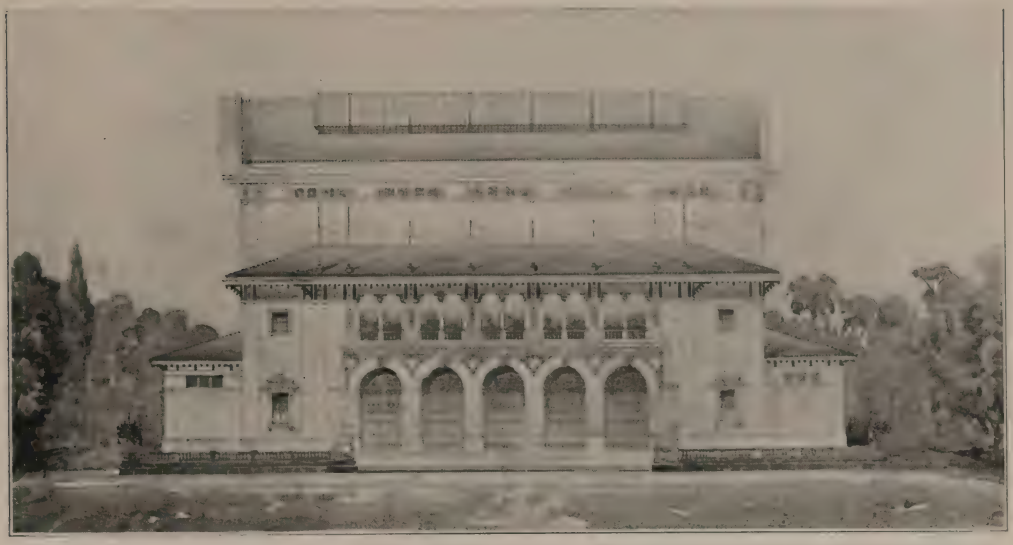


AN EPISCOPAL CHURCH: PLAN.
(Advanced Design.)

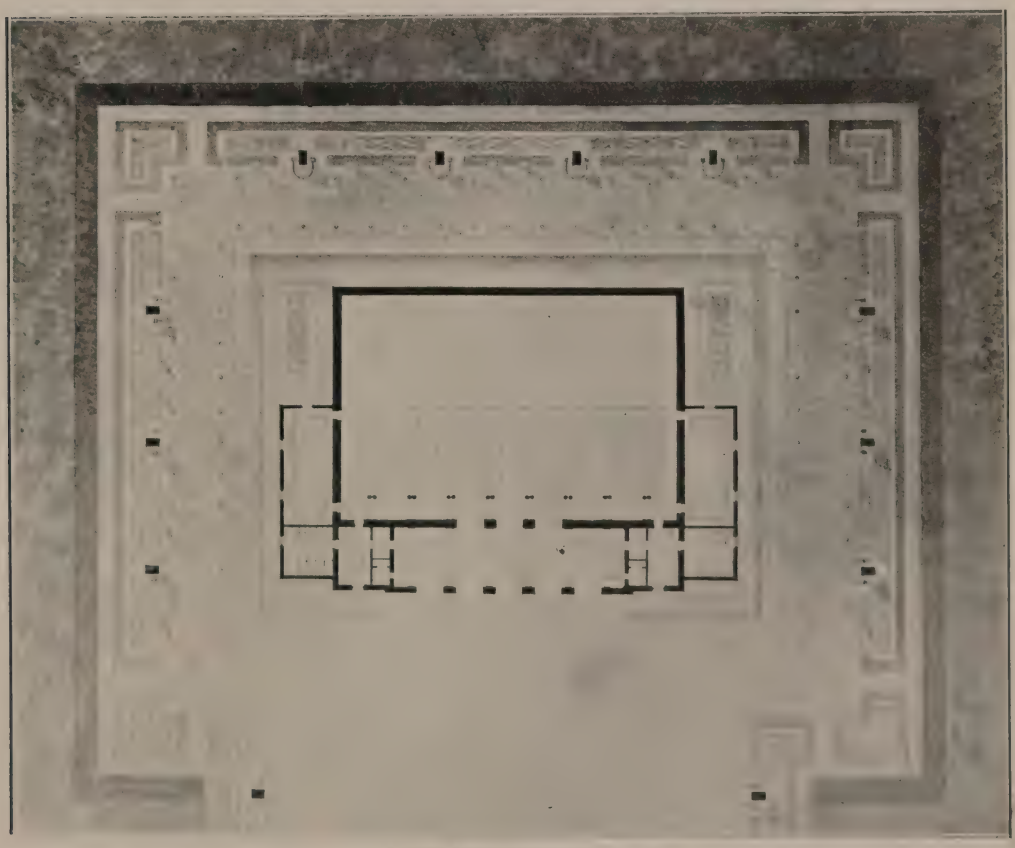
The more usual course is to make scientific construction a separate but parallel course of study such as will enable the student to design instinctively, as it were, in terms of construction; in other words, to make all his school designs "constructible." This, however, is an incomplete solution of the question, and in some schools—perhaps in most—the ordinary problems are supplemented by a certain number of problems involving structural design, the preparation of working drawings and strain-sheets, and the making of the requisite engineering calculations. The Paris school prescribes as one prerequisite for its diploma the working out of the entire structural design and details of the final or thesis problem, and this might well be done in all our American schools.

Whether a large number of short problems or a smaller number of long and elaborate problems affords the best training is a debatable question. In the one case the student acquires a more varied discipline, in the other the study of each problem is carried further and is more thorough. It is again the question of broad *versus* intensive discipline. In most of our schools the longer problems are alternated with one-day sketch-problems, thus following, as in so many other things, the lead of the Paris Ecole. This practice has the sanction of generations of use, but it is still open to question whether a greater variety of exercises in design by means of a larger number of shorter problems than is now customary might not be found to be, after all, more beneficial in the long run.

More, however, depends on the teacher than on the system. The important thing is that the teachers and juries shall insist always upon the fundamentals of design rather than its superficial aspects; upon good taste, good proportion, sensible and artistic planning, refinement and beauty of effect, clean, straightforward draftsmanship, rather than upon showy details and tricks of brilliant rendering which distract attention from the fundamental design. It is upon the master that the pupils' advance in taste depends; good taste is not communicated by lectures, but gradually



A PELOTE COURT: ELEVATION.
(Advanced Design.)



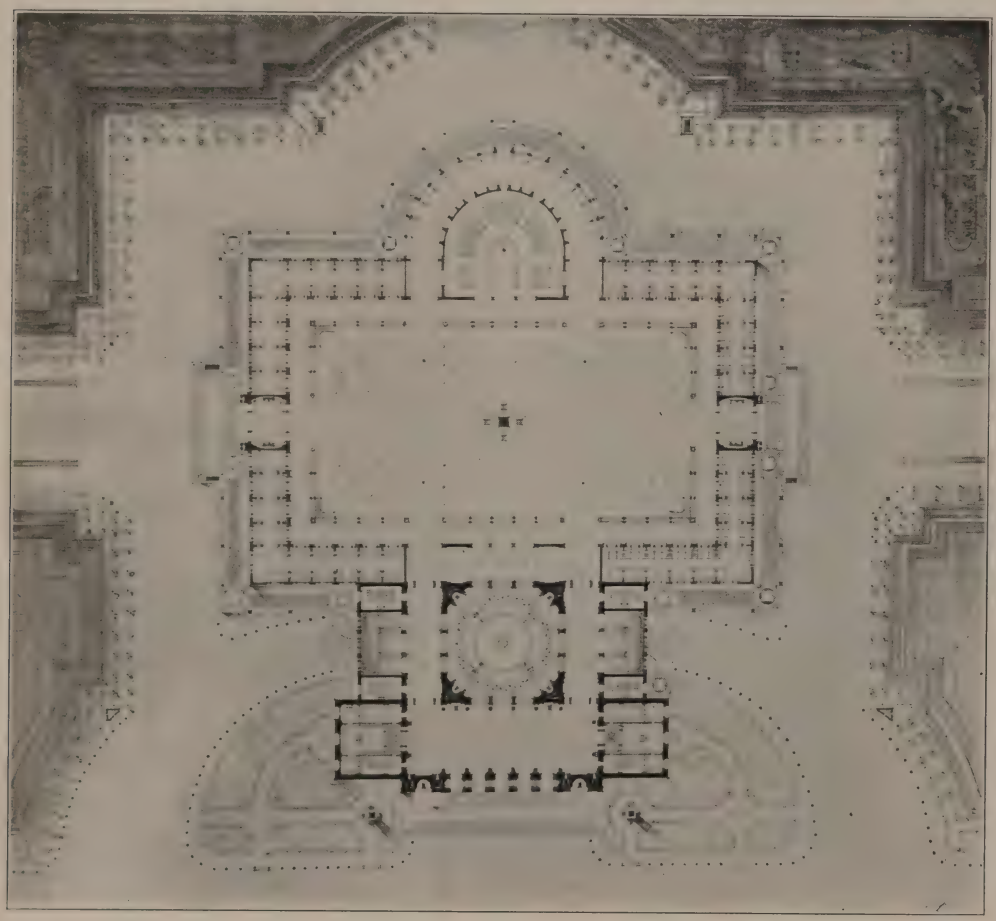
A PELOTE COURT: PLAN.
(Advanced Design.)

acquired through constant contact with masterpieces of art, and with personalities themselves filled with a communicable and infectious enthusiasm for the good, the true and the beautiful in the art they teach.

III.

The foregoing paragraphs represent in general the ideas which prevail in our best schools, and which have for the most part received emphatic endorsement in the report of the Committee on Education of the American Institute of Architects, prepared for the recent convention by its chairman, Mr. R. A. Cram. As representing one effort to embody these ideals—by no means yet with entire success, but with a consistent reaching out towards their realization—the methods employed in the school of architecture of Columbia University may have a certain interest.

In this school the work in design really begins for the majority of the students entering the school as novices in the middle of the first year of professional study. The first half of that year must, of necessity, under present conditions, be occupied with very elementary subjects. The students learn their orders and how to cast their shadows, how to lay washes, how to render backgrounds and foregrounds, how to handle the T-square and triangle, pencil and brush. They must learn the alphabet before they can begin to spell. By the



A NATURAL HISTORY MUSEUM: PLAN.
(Graduate Design: Columbia Fellowship Competition.)

middle of the first year they are ready to undertake small and simple problems in the use of the orders and the more familiar classic forms of doors, windows, pediments, balustrades, etc.; they are learning to spell with the one practical architectural alphabet which they have mastered.* By the end of the first year they are sufficiently familiar with the manipulations of architectural drawing and with the commoner applications of the orders and elements of architecture to be admitted to the problems entitled "Elementary Design." In these, the subjects are simple buildings, in some cases making use of prescribed orders, in other cases permitting of a freer range, and furnishing problems to each of which the afternoons of three or four weeks may be devoted. The student acquires his first discipline in the artistic considerations which distinguish a good plan from a bad one, a well composed façade or section from a poor one. Presentation counts for a great deal in these little problems, because the young designer must be made to acquire absolute mastery of his means of expression in order that in later and more important problems he may instinctively and without effort express his design in the most advantageous manner. When the student has acquired the prescribed number of "points" in design in this class, he is entitled to take those of the next higher division called "Intermediate Design." The problems in this class are fewer in number and more elaborate than the elementary problems, and introduce more varied considerations of planning, composition and surroundings. They include such buildings as a post office, a public



A PROPYLAEA AND COLONNADE.
(Advanced Design, Ten-hour Sketch.)

*These elementary attainments are to be hereafter insisted upon as requirements for admission to the school, so that the student will then begin his work in design at the very outset of his school career, and a larger number of points in design will be required for graduation.

library, a crematory, etc.; buildings of a somewhat complex character but not yet of great monumental importance. The problems in this class require from four to six weeks for their elaboration, and the juries in their awards place emphasis upon fundamental qualities of planning and composition, while they penalize slovenly and negligent presentation by exclusion from any awards. It is not the presentation but the real design of the problem which determines the merit of the different solutions. In this class the student is required to win a larger number of "points" than in the Elementary class. There is no prescribed length of time in which these "points" may or must be acquired, so that each student is advanced from one class to the other solely according to his own skill and advancement as shown by his work. Some pass through both classes in a single year, others take two or more entire years to accomplish the same result, and others do it in varying periods between these extremes.

The highest class of problems given to undergraduates in the school is termed "Advanced Design." The students who take this work are, for the most part, such as have completed all or nearly all of the prescribed lecture courses and class room work and are therefore free to devote their entire time to these exercises. The subjects of the problems are of a monumental character and extremely varied in kind. Variety of experience is a desirable acquisition for the young student, so that while concentration marks the work of the earlier classes, the purpose of the advanced problems is to give the student the widest possible range of experience. Churches and synagogues, technical schools and like problems, involving the grouping of many buildings, state capitols and town halls, presenting the problem of a single monumental exterior and complex planning; railroad stations, armories, hospitals and school buildings, furnishing practice in the meeting of highly specialized and practical requirements; a frontier custom house and lighthouse of picturesque character; decorative problems such as a monumental ceiling or a memorial arch, and problems involving a certain amount of landscape architecture—such is the varied scope of the problems in this class. It is interesting to note the effect of this training upon the student as it shows itself in the final thesis design which must be submitted before graduation. The fuller grasp of the conditions dominating a problem, the increased sense of monumental fitness and artistic propriety, the gain in resourcefulness and flexibility of design, the greater ease and readiness with which the details are handled; these things measure the efficiency of all the training that has gone before. The programs of the problems in advanced design are purposely so framed as to require for the most part drawings of large dimensions involving bold delineation and breadth of handling. The student must learn to see things in a large way if he would handle them broadly. Little bits of drawings, however valuable in certain stages of his training, will never enable the student to work in a large-handed and masterly fashion. The buildings he is to erect are large objects, anl largeness of scale and breadth of handling are not promoted by the study of either plan or elevation solely to the 1-16″ scale.

Alternating with these various "problems" (as they are technically called in the school) there are given out in each of the three grades a series of sketch-problems or "sketches," each to be executed entirely within ten or twelve consecutive hours, as exercises in rapid invention and delineation. The subjects of these sketches are usually small structures like rustic gateways, water-towers, band pavilions or the like, or else (especially for advanced students) compositions of a decorative character, such as a fire-place, a public clock, a ceiling, a tomb or an episcopal throne. The dominant considerations in judging these sketches are: first, a good and reasonably artistic scheme or fundamental conception, and secondly, a simple and effective presentation—clear, forcible and workmanlike drawing, with a touch at least of imagination and feeling in the delineation and coloring. The standard is purposely kept high, and very few of

the sketches are awarded even the coveted "pass," which counts for one point on the student's record, while a "mention," counting two points, is still more rarely accorded.

Of a still higher grade are the graduate problems given to post-graduate students, some of them candidates for the higher degrees. Four such problems occupy the academic year, forming a continuation of the discipline of the advanced design. These problems may be taken by graduates of the school resident abroad, doing the work in the Paris *ateliers,* or as special student-guests of the American Academy at Rome, the programs being sent to them from Columbia University. The most important of the post-graduate problems are those given out as the competitions for the resident or the traveling scholarships—one of each kind every year.

Supplementing all these problems in design are the special problems given out as a part of the work in the courses in the history of ornament, in architectural history, and in construction and office-practice. A Byzantine column and spandrel, a Romanesque doorway, a Gothic window or tomb, a Renaissance pilaster or entablature, a Renaissance ceiling, a Louis XV. mantel and wall-treatment, as exercises in decorative style; a chapter-house or a bay or west front of a Gothic church for practice in the mediaeval styles; a country house in wood and a city house, with the drawings worked out, figured and calculated as for the contractor's estimates—these or like problems serve to remind the student that architectural design is a practical art as well as a useful art, and that styles are studied not as mere curiosities, but as languages which can be used.

A paragraph may be devoted to the machinery of the instruction and its working. The school maintains three drafting-rooms, two of these on down-town streets, under the general care of two distinguished architects with the rank of professors in the University—Mr. McKim and Mr. Hastings—each represented and assisted in the actual work of instruction by younger practitioners specially qualified for such work; and a larger drafting room at the University under two instructors, both likewise practicing architects. These six gentlemen form a Committee on Design, meeting from time to time to prepare the programs for sketches and problems, to discuss the general interests of the work and to select the jurors who, with one instructor from each drafting room and the executive head of the school, pass upon the various designs submitted. The dates for handing in each problem are scheduled and the drawings rejected unless handed in by the specified dates. They are mounted on stretchers and hung on the walls in the "model-house" near Havemeyer Hall on the University grounds, and there examined and judged by the jury on an appointed day. The awards consist, for the "problems," of "passes," counting three points, "mentions," counting four points, and "special mentions," given only for exceptional excellence, counting five points. The standard of the work depends very largely on these juries, which unite in their membership the academic element and that of the "outside" general practitioner. The partly changing membership of the jury makes it impossible for the work to fall into narrow ruts, or for students to win points by sacrificing fundamental qualities in their work to particular "stunts" or tricks supposed to be in special favor with the jury, for they never know who is to be on the jury. It likewise renders impossible the domination of the jury, month after month, by one person or one element, and thus two of the objections alleged against the jury system as organized in the great Ecole at Paris are effectively removed. No medals or prizes are offered; the awards are honors having a purely scholastic value, and as their number is not restricted and they are given for absolute and not merely relative merit, they become emulative rather than competitive distinctions, and any one or any number may win them, whereas a medal or prize can only be won by one man to the exclusion of all the rest, no matter how good their work. The two annual fellowships, one for resident and one for foreign study,

are awarded as prizes, it is true, but not to students in the school. They are open only to graduates, and the competitions are established to determine the holders of the fellowships instead of the fellowships being offered to stimulate interest in the problems of the competitions.

IV.

All this is, however, the mere machinery of the teaching of design. The results depend upon the judgment, taste and enthusiasm of the men who administer the teaching and on the industry, imagination and enthusiasm of the students who work under them. At Columbia the six professors and instructors having charge of the design give only a part of their time to the work of the *atelier.* They are all practicing architects, not academic pedagogues. This has both its advantages and its disadvantages; the interest of the instructor is divided, but on the other hand he does not settle into narrow academic ruts, and brings always to his work the spirit and the experience of the active profession. The results have vindicated the system, but as in all else, less because of the system itself than because of the interest, devotion and enthusiasm of the instructors. As for the students, some do good work and some poor work, but the system of "points" puts a premium upon quality and penalizes inferior work, so that the incapable and the lazy very soon drop out of the race. The man who finally wins his certificate or his diploma goes forth into the new life of active practice in the office with a professional equipment of training and discipline which compares favorably with that of any other profession, and the value of which he realizes more and more thoroughly as the years go by.

The cost of such an education at Columbia University is less than at most technical schools in the United States, the fees charged amounting to scarcely 50 per cent. of the actual expense to the university of providing the instruction. A student who pursues the entire course for the degree or certificate, if he spends four years in doing it, pays altogether about $860 in fees. If by hard work and brilliant performance he can accomplish the same in three years, it will cost him less than $700. This covers all the drawing, design, mathematics, history, theory and research, and includes the special fees for registration, gymnasium and graduation. But the university is also very hospitable to draftsmen who cannot afford either the time or the money for such a course, admitting them as "special" or "non-matriculated" students, to take whatever course or combination of courses they wish to pursue. All students who take only a part of the work pay accordingly; so that a non-matriculated student can, for example, take elementary or intermediate design and drawing at a cost of only $45 per year; while for the class-room courses the charge per half-year is $7.50 for each hour per week of lectures or class-room work. Thus every student may regulate his work according to his purse. It is perfectly possible for a draftsman who can arrange to command two or three hours two or three days per week, besides his evenings, to complete the entire course for the certificate in six or seven years, with a splendid gymnasium and an incomparable library (the Avery Architectural Library) at his command at all times.

A. D. F. Hamlin.

Ambitions of Three Cities

Three of the most handsomely published and elaborate Reports on City Beautification that have yet been printed appeared almost simultaneously, in the month of February, from three far separated cities. The cities were St. Paul, whence came the Report of the Capitol Approaches Commission; St. Louis, whence came the "Reports of the several committees appointed by the executive board of the Civic League to draft a city plan"; and Boston, from which was issued, with the financial cooperation of seven other organizations, the Report of the Committee on Municipal Improvements of the Boston Society of Architects.



FROM THE OLD TO THE NEW CAPITOL IN ST. PAUL, MINNESOTA, THE SITE OF THE PROPOSED CEDAR STREET MALL.

Though in a general way the reports deal with a single subject locally applied, it is well to note their distinctions. Their geographical distribution—from the extreme East, the great Northwest, and the great Southwest, is significant. The distinct source that was the origin of each may also be observed: in Boston the Report was made by a society of professional men, conscious of the civic responsibility imposed by their special knowledge and cultivated ideals; in St. Paul it came from a commission owing its existence and drawing its inspiration, as well as its expectation of popular support, from the enthusiasm aroused by the beauty of the new Capitol; in St. Louis it was prepared by civic improvement enthusiasts, there banded into a large and influential society that is ably conducted. The manner of presenting the reports was of not less interesting variation. St. Paul presented the matter as an official report to the city council from a regularly appointed commission; St. Louis presented it with a hurrah, at a big City Plan Dinner, where the handsome report was distributed as a souvenir; Boston issued it at the joint

expense, significantly, of these organizations: The Society of Architects, the Chamber of Commerce, the Real Estate Exchange, the Metropolitan Improvement League, the Stock Exchange, the Merchants' Association, the Board of Fire Underwriters, and the Master Builders' Association. But in the conservative old Eastern city the report bore on the title page the statement:

> The suggestions offered herein are not endorsed, approved or urged by the Boston Society of Architects, or by any of the other organizations who have joined in the expense of publishing this pamphlet. It is printed as an interesting study of subjects of public concern and in the hope that it may lead to fuller investigation by competent authorities into the subject of the municipal development of Boston.

The differences that characterize the reports as a whole suggest, in a general way, the complete independence of each other with which they were prepared; their individuality—which is a quality that reports on city beautifying must always have, to be worth anything locally; and that each is *sui generis,* and therefore fitted to its environment. These are important considerations that emphasize, rather than detract from, the underlying, striking, fact of the general unity of subject of these three reports, simultaneously issued from widely separated cities—each a magnificent ambition, felt with a strength and confidence that did not hesitate at costly presentation.

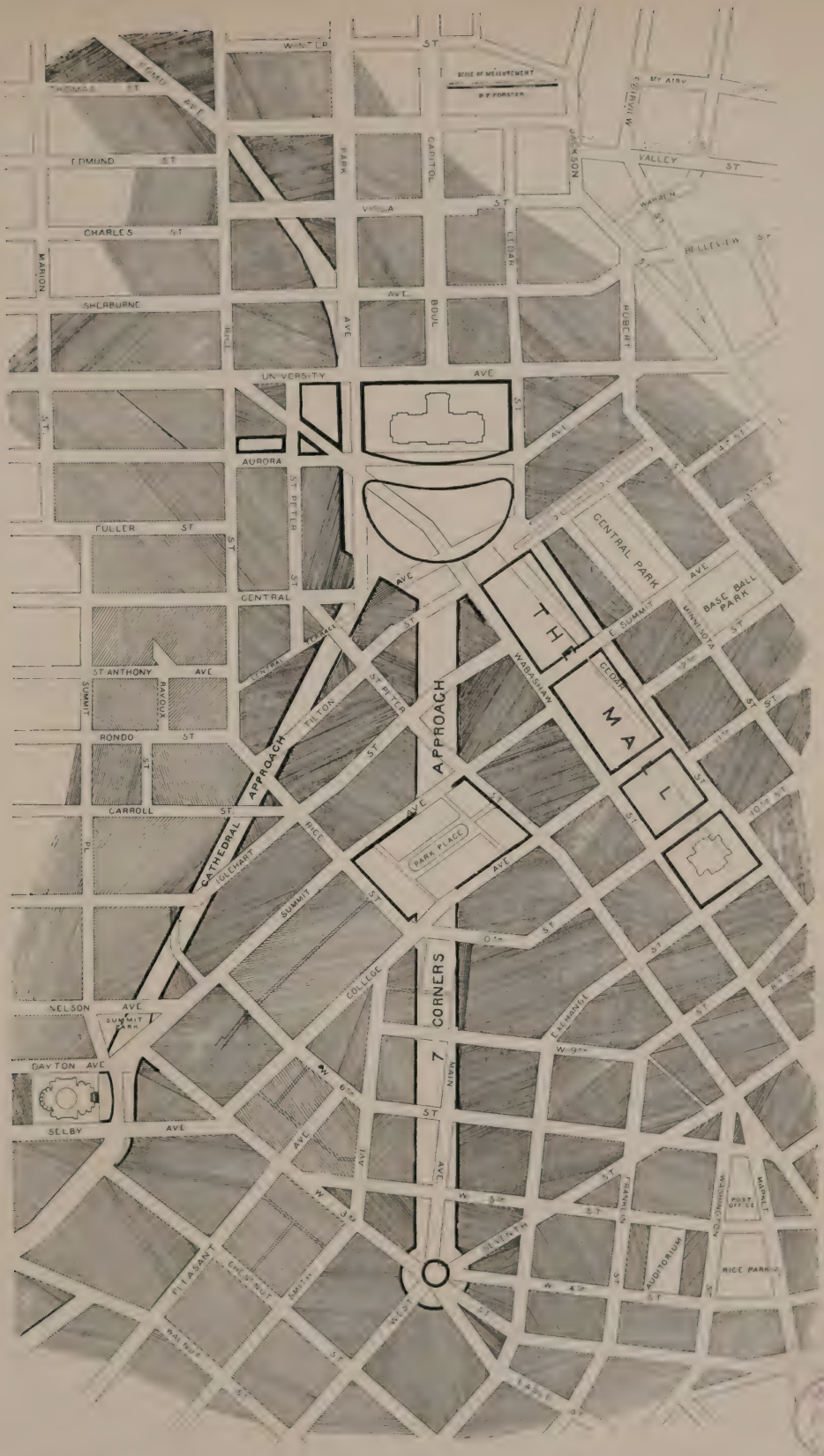
Let us examine them more specifically.

In pursuance of a resolution of the Common Council of St. Paul, approved Feb. 9, 1906, a committee of five was appointed to report a plan of suitable approaches to the new Capitol, to estimate the cost of the approaches it would advocate, and to recommend such legislation as in its opinion might be necessary for the acquisition of the property needed. The commissioners were Louis Betz, Cass Gilbert (the architect of the Capitol), Pierce Butler, Oscar Claussen and George M. Tibbs. Mr. Betz was made chairman. It may be said in preface that previous to this time Mr. Gilbert had called attention to the inadequacy of the Capitol's present approaches, and had suggested some of the handsome effects that could be secured by a realignment of streets, and that there was a pretty general wish to obtain a correction and proper rounding out of the site itself, and a good deal of interest in the more ambitious suggestion. It was, indeed, as a result of this interest and wish that the commission was appointed.

Thus there lay before the committee a specific problem, demanding a solution that must be in itself comparatively limited, however far-reaching the results. But because the results were far-reaching and the commissioners intensely in earnest, the commission took the ground that it was reporting not only to the Common Council, which had "already shown its sympathy with and interest in the project," but through the Council was addressing "the Legislature and the people of the city and the State." Hence it is that the report is in form of an argument and appeal, that it is so sumptuously published, and is adorned not only with drawings, maps and photographs, immediately germane to the project, but with views of what is good in city building in all parts of the world.

The project itself consists of four main features. First, the rounding out of the Capitol grounds, to provide a symmetrical plaza before the building. To accomplish this two schools will have to be relocated, and the line of a street with important car traffic somewhat altered. These things can be done without difficulty. The other main features are a central and two diagonal approaches, one of the latter terminating in the new cathedral and the other in the old Capitol.

The central approach lies directly before the building on the north and south axis, extended, of the dome. Midway in its extent it crosses Park Place. Its terminus, 3,800 feet from the front façade of the Capitol, is the Seven Corners, a "rond point," at which seven streets converge. It is planned to make this approach an avenue at least 180 feet



MAP OF PROPOSED CAPITOL APPROACHES, ST. PAUL, MINN.

This map shows the present city plan. The territory inside of the heavy line indicates approaches and parkways to be acquired.

in width—the dome on its center line—bordered with broad walks, side lawns and trees. It will open a view of the Capitol from the business district, will be an immense convenience to traffic—which can now approach the Capitol from this direction only by a long detour or a zigzag journey—and it passes through property that is poorly improved and cheap.

Of the proposed diagonal approaches the more ambitious is the Mall, which would extend a distance of 1,500 feet from the Capitol grounds. It is proposed to make it 300 feet wide, exclusive of Wabashaw Street, which it would skirt; it would be the main approach from the retail and hotel district, and would be passed by every traveler in the trolley between St. Paul and Minneapolis. The ideal which the commissioners have in mind for its development is apparently based on that of the Paseo in Kansas City; but they wisely confine themselves to their assigned task, presenting no detailed plan of improvement, content with the picture of the quarter mile and more of broad greensward and the broad and sweeping view that would be offered of the Capitol. Along this Mall, at some future time, the commission hopes other public buildings would be grouped, and it is pointed out that there would be presented here the opportunity to gain the end for which Cleveland is now spending millions and for which St. Louis expects to strive. On this tract also there is now little costly improvement.

The Summit Avenue approach, which would join the Capitol and the new cathedral, opening a splendid vista from each to the other, would extend 3,200 feet and be 100 feet wide. In its directness it would be a great convenience not only to citizens but to sightseers, and it would form a link where now one is much needed in the belt of parkways.

The three approaches together would cost, it is estimated, $1,970,388, at a generous calculation, and it is proposed that the city of St. Paul shall pay the whole of this cost of the land and that the State shall provide the development —"to give to the Capitol building such a setting as its exquisite lines and proportions demand." The commission prints a somewhat elaborate calculation to show that the tax yield from the increased values due to the improvement would very easily take care of the interest and sinking fund charges. It believes that "extensive advertising of the kind that Minnesota most needs, advertisement of its enterprise and foresight, of its culture and the development of its public spirit, would be the first result," and that a second would be multitudes of visitors. It urges immediate action, on the ground of economy; and it closes its strong report by an account of what is being done in other cities for similar projects of development. "It is a movement," it declares, "which is as much in the air today as the movement for parks was in the air ten or fifteen years ago. The park system is now recognized as a necessity. The interior boulevard, the Mall, and the grouping of public buildings will also be a recognized necessity a dozen years hence."

The problem covered by the report from St. Louis is far more complex than that discussed in St. Paul. Some forty-two citizens, representative of almost every profession and interest, were members of the several committees which, with indefatigable interest and industry, united in drafting the report. Its scope includes the whole city, and though it be fancied as failing totally of future result, it would always be a monument to present civic spirit. Happily, however, it is not likely thus to fail of effect.

In November, 1905, the Executive Board of the Civic League appointed a small committee to consider the feasibility and scope of a comprehensive city plan. This committee outlined the points which it thought should be considered and recommended the appointment of five local committees to prepare tentative reports, covering the various parts of the plan, and of a general local committee to co-ordinate the recommendations of these five committees and to incorporate them into a final comprehensive report. The report which is issued is the latter. It is presented "at this particular time with the hope that it will



A CITY PLAN FOR ST. LOUIS, PREPARED BY THE CIVIC LEAGUE OF ST. LOUIS.

furnish suggestions for the public improvements contemplated in the recent $11,200,000 bond issue"; but in its entirety it looks far into the future, and, involving an expenditure of more than $25,000,000, furnishes the city with a plan to grow toward and develop to in the coming years.

Following a brief introduction, there is printed, as a "statement of the general committee," a chapter on The Need of a City Plan for St. Louis. In this the familiar arguments are rehearsed, the examples of other cities are cited, it is stated that in the preparation of the report there has been "kept constantly in view the practical and the attainable," and that as a result of the previous lack of plan and insufficient regulation there has existed a "riot of conflicting and selfish interests" before which the citizens were helpless. The next chapter is an illustrated historical sketch of the physical growth of St. Louis. In its considerable length this offers an exceedingly interesting study of the undirected development of a city from its village days.

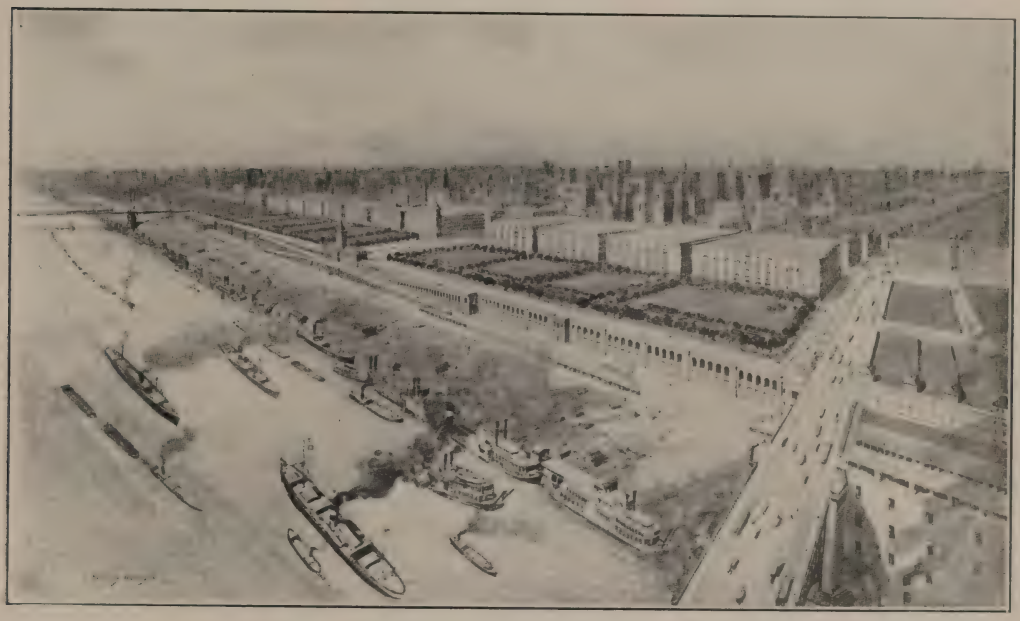
Following that comes the first division of the report proper. It considers the Public Buildings Group, and is a reprint, with "hearty endorsement," of that report of the Public Buildings Commission issued some three years ago, and which has been duly described in The Architectural Record.

With the succeeding chapter, on Civic Centers or Smaller Building Groups, there is reached one of the most interesting and distinctive features of the St. Louis report. The idea is the grouping around a common center, especially around a small park or playground, of the various public, semi-public and private institutions which have for their object the mental, moral or physical improvement of the neighborhood. This is urged with the greatest earnestness, both in general terms and specifically. The committee selects the sites for such centers, reviewing the needs of each neighborhood and the local advantages of the selected site. It develops a complete system of civic centers, and in doing so confines itself to what would seem to be the immediately possible; for it limits its recommendations of park reservations for this purpose to the $670,000 included in the bond issue. If the plan is carried out, St. Louis will have for its congested district a series of civic centers with which only Chicago, in its South Park district, could compete. The bulk of the argument is, of course, social and philanthropic; but it is pointed out that the plan gives "opportunity for an harmonious architectural and landscape treatment of the various buildings, thus adding to the intrinsic beauty of each; would foster civic pride in the neighborhood, and would form a model for improvement work the influence of which would extend to every home in the district."

The discussion of Inner and Outer Parks and Boulevards comes next. There is mapped a complete system to connect the park and forest reservations of the county. For one of the most important of the inner links, the Kingshighway, nineteen miles long and extending from river to river and tying together the principal parks, the money has been already appropriated and detail plans are completed. As to the parks themselves, St. Louis takes rank among the first cities in the country for the relative acreage of its reservations, but heretofore it has lacked such connecting drives to bind them into a system. The report, besides discussing the Kingshighway, plans a second boulevard to follow the Des Peres River and to extend to Jefferson Barracks. The two together, it is claimed, would give to the city a "parkway system unsurpassed in variety and beauty of scenery by any city in the Union, with the possible exception of Boston. The total length of the drives and parkways would be about thirty-five miles." And yet this is only the "inner system." In the way of "outer," or country, parks there is planned a belt system of drives and reservations suggestive of the Essex County system in New Jersey, of the Metropolitan system about Boston, and of those proposed for Providence, Baltimore, Chicago, Washington and other centers. The beauty of the natural scenery around St. Louis, the rapid growth of the city, the need of pleasanter

connections with the suburbs, are pointed out in general advocacy of the plan, but the committee frankly says it has no hope or expectation of seeing so much accomplished within the next five or ten years. This part of the plan is "offered as a comprehensive scheme toward which the city can strive for the next quarter of a century, adding section after section, as the circumstances demand and the finances of the city and county will permit."

In the chapter on Street Improvements there is reached the last chapter that deals strictly with the city plan. This includes suggestions for the river front, the railway entrance, street car lines, etc. The committee, stating that it has considered the streets "from two points of view—utility and attractiveness," adds that here there are "suggested only those changes which seem possible of accomplishment within the next decade." First, as to the river front. The report calls attention to the present deplorable condition—the familiar municipal story in America: a noble site almost abandoned by business, the city turning its back upon it, and its becoming a resort of the vicious and depraved. But new plans are timely. There is not only agitation for a deep waterway to the Gulf, but the citizens of St. Louis have voted in favor of a free bridge, which in itself gives great opportunity. Inserted maps and drawings show conditions as they are and "as they ought to be." It is proposed that the property lying between the Eads Bridge and the proposed bridge at Poplar Street and extending back from the Levee to Second Street, be purchased by the city, the bluffs for the whole width excavated to a level with the Levee and a broad esplanade constructed the entire distance on a level with Third Street. Under this esplanade, at the Levee level, would be the railroad tracks. Warehouses at Third Street would have basement connection with the freight tracks, and at intervals on the river side of the esplanade there would be little passenger stations for



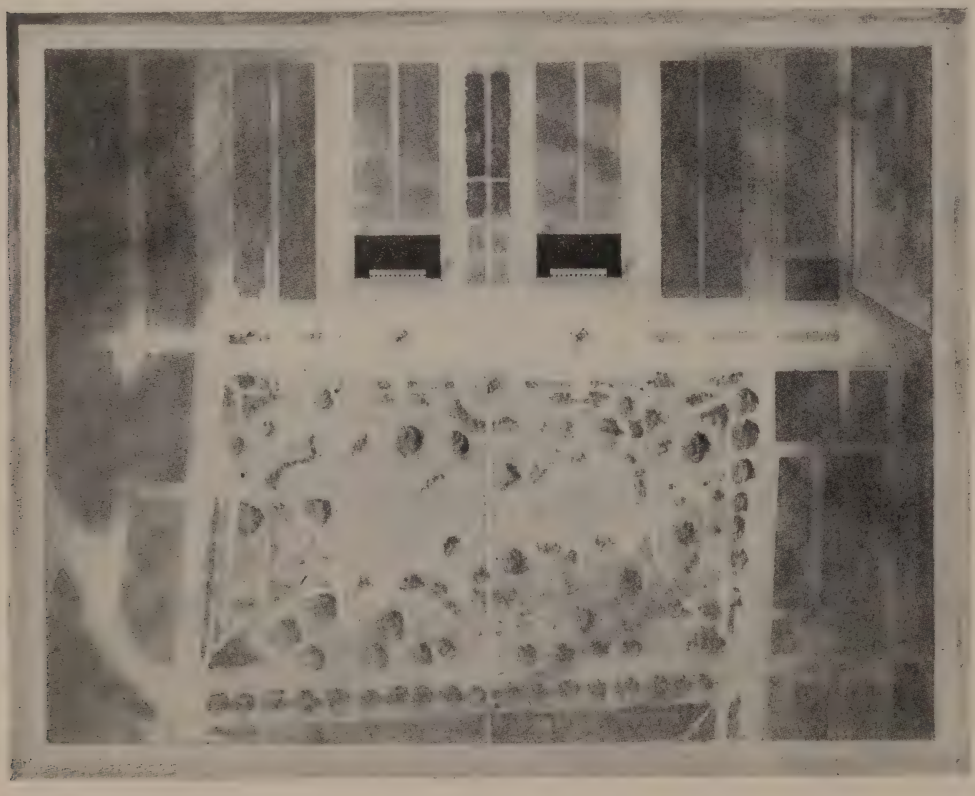
PROPOSED RIVER FRONT PLAN FOR ST. LOUIS.

Showing a broad, open Plaza from Eads Bridge to proposed bridge at Poplar street on a level with Third street. Railway tracks and passenger station under the Plaza, easy approaches from the levee, warehouses fronting on Second street, and Merchants' Exchange Court in the center.

suburban trains. Between the river level and the esplanade there would be connection by elevators and inclined roadways, as at Algiers. The suggested treatment is simple, dignified and commercially beneficial.

Of the proposed street changes the most radical are those designed to improve the approach to the Union Station. It is recommended that the city widen Chestnut Street to 150 feet from the stalishment of a building line, the adoption of better designs for street utilities. The final chapters of the report are devoted to an appeal for a Municipal Art Commission and to a discussion of the legislation that would be needed to make effective the recommendations of the committees.

We come now to the Boston report. It begins with a statement of deplorable conditions that is not at all what one



THE IMPROVEMENT OF ARLINGTON STREET, BOSTON—PLAN.

tion to the municipal buildings group and develop it like the Champs Elysées, and that there be purchased two blocks for a small park. "These improvements would cost a considerable sum of money, but they would be of inestimable commercial value." The report also discusses at some length the improved development of the streets, the restriction of the width of roadways on residential streets, the systematic planting of trees, the removal of unsightly poles and wires, the estab-

would have expected. Even, it says, "our city parks, which give us a reputation for a love of the beautiful, are now nearly a generation old, and the metropolitan parks were started thirteen years ago." It names a great many neglected opportunities and positive errors of which the city may well be ashamed. It describes in some detail and with many pictures what other cities in Europe and America are doing, and comes then to a "Diagnosis of the Case." This lays stress

on the depressing effect of large areas of unoccupied space near the center of the city—such as the freight yards on Boylston Street; the South Bay, and the abandoned lands of the Boston & Providence R. R.—and it thinks an urgent necessity is "the consolidation of the population by filling the gaps in the city plan." To this end it is proposed that certain streets be cut through the site of the old Providence Station, and that, if possible, the Boston & Albany be induced to transfer its Boylston Street freight yards to the filled-in South Bay.



THE IMPROVEMENT OF ARLINGTON STREET, BOSTON—BIRD'S-EYE VIEW.

Taking up the more strictly æsthetic recommendations, one finds many interesting studies. There are presented plans for inner and outer belt line boulevards, and for a building of new and realignment of old streets in the Fenway district, so as to obtain better cross thoroughfares. There are also printed three plans for the development of the Charles River Basin, each design showing the creation of an island in the basin. In two cases it is proposed that the island be devoted to building, adding much to the assets of the city; the third suggests that it be made a park. But far more interesting than the discussion of the manner of the island's development is the presentation of the general arguments adduced in favor of it. The basin, it is pointed out, is "three times the width of the Thames at Westminster Bridge, is seven times the width of the Seine opposite the Eiffel Tower, and about ten times the width of the Tiber at the Castle of St. Angelo." It is so broad that buildings and human activities are only faintly discernible on its distant shores, and the eye must gain its pleasure solely from sky and sea. Further, the great width very seriously separates Boston and Cambridge. Bridges are too costly to be provided in adequate numbers and are now one to a mile, as compared with four to six in the mile in London and Paris. Passage over the long bridges is often disagreeable, and one designer frankly

states that to him the present basin, from an artistic standpoint, is "empty, vague and uninteresting." He thinks an island would form a "desirable focus, would give scale to the banks, and would leave adequate waterways on either side for all practical and picturesque effects." There will be many to disagree with him, but the argument and plan are certainly interesting. From the material and financial standpoint there are apparently no serious difficulties.

Other interesting schemes have to do with a proposed extension and glorification of Arlington Street—the quiet thoroughfare now skirting the west side of the Public Garden from Boylston to Beacon Street. The plans extend the street to the north, to join the river drive; they widen it greatly for a block on either side of Commonwealth Avenue, that that may have a worthier terminal. The availability of the transformed street as a site for public buildings is pointed out, and a suggestion is that the street be extended on the south to Castle Square.

The improvement of Copley Square is another topic of interest. Four suggestions are given, but they need not now detain us, as the much-needed remodeling of the square, in accordance with the plans of C. Howard Walker, is being actually carried out. There are some plans for street changes in various parts of the city, and the report closes with a discussion of inland canals for commercial purposes and of the improvement of the port of Boston. The latter is considered at length and with many charts and maps. The point of view is the commercial and utilitarian rather than the æsthetic; but, as always, the substitution of system, of orderliness, of harmony, and of substantialness in construction for the haphazard, the unrelated and the flimsy, would in itself make for dignity and impressiveness. Indeed, the new qualities, when applied to a commercial enterprise, are beautiful in their aggregate effect.

No one can examine these reports nor this swift review of them, if it have any adequacy, without an increased consciousness of the new spirit that is abroad in our cities. And with the stronger consciousness of its presence there comes a greater respect for its quality, for its breadth, for its sanity, for its application to cities of the old architectural rule that beauty is not dependent on decoration, but on construction. There is very little that is visionary in these reports. Were the plans for each city carried out *in toto,* there is no question that each of the three cities would be far better than it is to-day. It would be better not merely to look at, but to live in, to work in, and even to pay taxes in. There would be some increase in taxes, but not very much, when allowance is made for heightened assessment values, and the returns would be large. The addition, going not to the wear and tear of daily maintenance, but to municipal luxuries, would bear rich fruit in pleasure. Finally, it is to be remembered, as the most important and significant fact of all, that these reports are not exceptional, but are typical. "There is a new competition of cities," based on a qualitative, not the quantitative, analysis.

Charles Mulford Robinson.

"Civic Improvements"

The Case of New York

The sincere friends of the improvement of our American cities in convenience and appearance should not disguise from themselves that the movement is not making as much practical headway as it should. During the past seven or eight years an enormous deal has been written about this subject. The friends of good public architecture in almost every important city in the country have sought to secure the adoption in their own neighborhood of some more or less comprehensive plan of public improvements. Beginning with Washington, many such plans have been carefully prepared, fully published and assiduously discussed in the local papers. Neither has this agitation been wholly without result. Although many stubborn attempts have been made to situate new buildings of the National Government in places which would have blocked the future realization of the plan of the Washington Commission, such attempts have wholly failed hitherto, largely owing to the fact that the influence of President Roosevelt has been consistently used on the right side. Moreover, in other cities, such as Cleveland, a certain amount of progress has been made towards the final realization of a scheme which will add considerably to the better appearance of the city. It must be admitted, however, that on the whole the actual achievements of the new movement have not been proportional to the amount of ink which has been shed on its behalf. Improvements in public art and architecture have created a great deal of interest and enthusiasm as long as they remained on paper, but as soon as it was attempted to transmute the paper into steel and stone, both interest and enthusiasm have very much diminished. Either nothing at all has been accomplished or else only half-measures have been adopted. The movement has not had the momentum to override the first practical obstacles which stood in its path. Baltimore, after the fire, widened a few minor streets, but it refused to take advantage of the opportunity to widen the most important business thoroughfare in the city—a thoroughfare which was altogether too narrow for its purpose. The disaster which overtook San Francisco last spring offered that city an extraordinary opportunity to take definite steps towards the realization of the Burnham plan, but hitherto the advocates of that plan have not succeeded in securing the adoption of a single measure which would constitute a beginning of the Better San Francisco. Perhaps, however, the worst failure of all has befallen the advocates of improved and beautified New York, and the case of New York is at once so important and so typical that it deserves special and serious consideration.

Several years ago the movement for a Better New York culminated in the appointment of a City Improvement Commission. This body was not an unofficial collection of public-spirited gentlemen. It was named by the Mayor under a resolution of the Board of Aldermen, and its expenses were paid out of the public funds. Its functions were, of course, entirely advisory. The only purpose for which it was constituted was that of offering a "pious opinion" as to the means which should be taken in order to make New York a more comely and convenient place of business and residence. Nevertheless, inasmuch as it had been officially sanctioned, its proposals presumably stood on a different footing from those of architectural or municipal art societies. The commission was, in its way, an official recognition of the fact that New York ought to be a better looking, a more convenient city, and that its authorities had decided to make an earnest effort in that direction. The appointment of the commission figured in the minds of the municipal art reformers as a substantial triumph. The idea was that it had started New York on a ca-

reer which would terminate in a greatly glorified metropolis.

About a year after it was appointed the commission made a preliminary report. This report was received with a certain amount of disappointment by the active friends of a more convenient and beautiful metropolis, because, in their opinion, it was neither comprehensive nor magnificent enough; and, as a matter of fact, it did not make any novel and startling proposals looking towards either a new street lay-out or an original and imposing group of public improvements. The report did not do much more than recommend a series of new or wider streets and avenues, the need for which was perfectly obvious and had often been pointed out during the past twenty-five years. The proposals made with æsthetic considerations exclusively in mind were similarly conservative, and fell far short of recommending what a loyal New Yorker, who looked forward to seeing his city become the American metropolis in every sense of the word, would like to have accomplished. It was, in short, an extremely moderate and relatively inexpensive group of recommendations, and the commission purposely gave it this character because its members, after considering the matter carefully, thoroughly realized the futility of suggesting any more expensive, comprehensive and magnificent scheme. In spite, however, of its moderation, the report was no sooner received than it became, for all practical purposes, a dead thing. It provoked little interest in the newspapers. The city officials never paid it the slightest attention. No influential and insistent body of public opinion was created on its behalf; and recently, when the final report was published in a handsome volume, its issue attracted very little attention. The final result of the labors of the commission was a book, and even the book, in respect to the popular interest it provoked, has been a failure. There is not the slightest reason to suppose that hereafter, when the City of New York is obliged to deal with some of the serious problems arising from its inconvenient lay-out, the recommendations of the City Improvement Commission will carry with them any more authority than that, say, of an editorial article in a daily journal. The business of making New York City a more convenient and comely place of business and residence has not been advanced in the least by the agitation which preceded and resulted in the appointment of the commission.

This failure has not been due merely to the character of the commission or the manner in which it performed its work. The members of the commission were individually both public-spirited and competent gentlemen, although it must be admitted that they did not, as a body, carry with them any great amount of prestige. The sense that they did not command much public interest or confidence doubtless made the commission more timid and cautious in its recommendations than it would otherwise have been. None the less, their actual report was drawn up in the proper spirit, because it really sought to make the specific recommendations contained in the document as practicable as possible. The commission took conscientious and intelligent consideration of the obstacles which, in a city like New York, confront even the most necessary and the least expensive street improvements. It did its best to anticipate the really serious objections which responsible public officials must always make when they attempt to arrange the means, both legal and financial, necessary to the consummation of any great scheme of public improvements. But all these precautions did not prevent the commission from failing to accomplish any result proportioned to the amount of labor and agitation which the report had cost. Its recommendations were treated by the daily press in precisely the same spirit as if only the most chimerical and impracticable proposals had been made.

The failure of the commission to accomplish any important result has been due to many causes, the most important of which is undoubtedly the lack of any vigorous, well-informed, tenacious and influential body of supporting public opinion. The residents of New York are, on the whole, more public spirited than they were twenty or even ten years

ago; but their public spirit does not as yet express itself in a vehement demand for a comelier and more convenient city plan. The point which should be kept in mind, however, is that even if such a body of opinion did exist, it would be quite unable to express itself effectually, because of the existing legal constitution and financial condition of the City of New York. Let us suppose that at the next election the municipal art reformers could secure the election of a Mayor and a Board of Estimate and Apportionment who were pledged to take immediate and vigorous steps looking towards the adoption of a new, more convenient and better looking lay-out for New York City; and let us suppose that these city officials, after their election, sought to fulfill their pledges with as much energy as the present Board is now seeking to provide an improved system of rapid transit. It can be confidently aserted that even with the best will in the world, these officials during their four years of office would be unable actually to redeem their pledges. The financial and legal means at their disposal would be wholly inadequate to the realization of such a policy, and before they could accomplish any really important changes in the street plan of New York, they would require the assistance of at least two important amendments to the State constitution.

The financial condition of the City of New York is peculiar. The constitution of the State prohibits cities from borrowing more than ten per cent. of the assessed valuation of the real estate. New York has already borrowed so much money for the liberal policy of transit, dock and other improvements which has been adopted, that the margin for future borrowing amounts only to about $50,000,000. Practically the whole of this sum, and a great many millions more, have been pledged for the purpose of building new subways, bridges and the like, and it has been found in the past that the increased borrowing capacity arising from the yearly increase in the real estate assessments is not sufficient for such regular and necessary purposes as new school-houses, new docks, new pavements, and the necessary street opening on the margin of the growing city. It would be quite impossible for the municipal authorities to make any regular appropriations for street improvements in the older portion of the city which would be sufficient to accomplish one-tenth of the recommendations of the City Improvement Commission. Neither is it relevant to answer this objection by saying that the recommendations of the commission are not intended to be carried out all at once—that its plan merely arranges for a series of improvements, which could be carried out gradually, and the cost of which could be distributed over many years. A comprehensive scheme of street improvements could no more be carried out gradually than it could be carried out immediately. The financial condition, outlined above, applies as much to the future as it does to the present. The City of New York is not competent to spend anything like as much money for improvements of this description as their importance warrants. It could do so only by abandoning the extension to the subway system and other similar public works, which are absolutely necessary to the growth of the city in population and business. A municipal administration elected for the purpose of realizing the ideas of the municipal art reformers would be similar to a government elected for the purpose of declaring a war, but deprived of the means of raising and equipping an army. Under such circumstances a declaration of war could only mean failure, humiliation and disaster.

The constitutional limitation placed upon the borrowing capacity of New York is consequently a formidable obstacle to the realization of any comprehensive plans looking towards a more convenient and better-looking city. But it is not the only obstacle. Let us suppose that the administration pledged to the ideas of the municipal art reformers succeeded in having the State constitution amended. Let us suppose that the money to be spent upon street improvements did not have to be included in reckoning the debt covered by the constitutional limitation. Even with their hands freed

in this essential respect, a municipal administration pledged to begin the æsthetic redemption of New York City would be faced by further obstacles equally formidable in character. The worst of these obstacles issues from the enormous cost of real estate in Manhattan and the large number of skyscrapers which have been erected in that borough. Land in the central part of the older city of New York is so high in price that the cost of street widenings on any large scale is absolutely prohibitive. The city can barely afford to buy the few strips of land which are necessary for terminals and approaches to the new bridges. The cost of the three small squares which are to be covered by the new Manhattan terminal of the Brooklyn Bridge will be over $6,000,000. The New York & New Jersey Tunnel Co. have had to pay more than $6,000,000 for the half-block needed for a terminal station on Herald Square. The Court House Commission recommended the purchase of three blocks on the east side of Union Square for the new County Court House, because of the comparative cheapness of real estate in that part of the city. Nevertheless, in spite of the fact that these blocks do not contain a single skyscraper, they cannot be purchased by the city for less than $11,000,000. The adoption of any satisfactory plan for a wide and handsome approach to the new Blackwell's Island bridge has been delayed for years, partly because of the enormous expense of purchasing the necessary property between 59th and 60th streets. Under such circumstances the city officials, when confronted by the absolute necessity of condemning land for public purposes, inevitably adopt the cheapest plan which has any promise of being adequate. No matter how much money a municipal administration was empowered to spend towards the realization of a better street lay-out in Manhattan, its members would not dare to commit the city to the expenditure necessary even for the most gradual realization of the projects of the municipal art reformers. A lay-out for New York, really sufficient for the purpose of making it a more convenient and beautiful city, would cost several hundred million dollars. Just how many hundred millions no one can say, but, of course, the amount of money to be spent would increase in even a higher proportion than the actual value of the specific improvements. Thus a new and very desirable longitudinal thoroughfare could be obtained at a comparatively small cost by the extension of Seventh Ave. south to Varick Street, and by the extension of a widened Varick Street to Broadway, but the new avenue so obtained, while useful, would be of minor importance. What New York particularly needs is diagonal thoroughfares cutting through the heart of Manhattan Island and relieving such centers of congestion as Herald Square, Fifth Avenue and Twenty-third Street and the like. But it is just such plans which, no matter how useful they would be, are wholly impracticable, because it is in the neighborhood of these congested centers that land is so valuable and the number of skyscrapers so considerable. No clear-headed municipal administration would dare to accept the responsibility of adopting and beginning the realization of a plan which, in the course of its fulfilment, might easily double the municipal debt, and effect an enormous increase in the tax rate.

There is only one way in which the financing of any comprehensive improvement in the street system of New York could be arranged. Some method must be found of making such improvements partially or wholly pay for themselves. Both Paris and London have very largely paid for the street improvements in those cities by adopting such a method of financing. When a specific street widening or extension is decided upon, such as the improvement of the Strand, the municipality condemns not merely the land actually necessary for the new street, but all the immediately adjoining property as well; and after the improvement is completed the land not actually needed is sold off at a profit, which is nearly if not quite sufficient to pay the cost thereof. This method has the advantage of economy of enabling the city to reap the benefit of its own good works, and of preventing the splitting up of land-

ownership on a new and important thoroughfare into lots, which are too small and too irregular in shape for a large and handsome building. But in spite of these manifest advantages, this method of financing could not be adopted in our American cities. In New York the State constitution forbids it, and it is safe to say that no radical improvement in the street layout of New York will be possible as long as this constitutional prohibition exists. Such is the second respect in which the municipal administration of New York it at the present time legally and financially incompetent to carry out the ideas of the municipal art reformers.

The task of amending the constitution even of a State is always a slow and a difficult affair; but the task of amending the constitution of New York in these two respects would be more than usually difficult. The ultimate effect of the two proposed amendments would be an enormous increase in the powers of the municipal administration. The Mayor and the Board of Estimate would have the authority and the means to embark on what would be a gigantic real estate speculation; and the danger that this authority might be abused would undoubtedly make the conservative public opinion of the State very cautious about authorizing the proposed amendments. Public opinion would want to be very much more convinced than it is that the municipal officials are incorruptible and competent before it could accept such radical changes in the legal constitution of the city; and the only way in which public opinion can be reassured on this score is by means of a considerable improvement in the quality and efficiency of the municipal government. Thus the municipal art reform movement is closely associated with the general movement towards municipal reform. As long as our municipal governments are untrustworthy, public opinion will be loth to sanction any considerable increase in their legal powers; and as long as such increase in legal powers remains unsanctioned the vision of a beautified and glorified future for our larger American cities must remain, to a large extent, impracticable. Of course small undertakings can be undertaken under existing legal and financial conditions; but such undertakings are precisely the sort of thing which will never repair the errors which are retarding the growth and distorting the appearance of cities like New York and San Francisco.

The case of New York has been considered at some length, not only because of its intrinsic importance, but because it is really typical. As other American cities increase in population and business their condition will come to resemble more and more the condition of New York. Many of these cities are undoubtedly still in a position to avoid, in some measure, the predicament which faces the people responsible for the welfare of New York City. They are in a position, that is, to benefit by the warning of New York, and to avoid some of New York's mistakes; but they can only take advantage of this position by obtaining municipal governments like that of Galveston, which is endowed with complete responsibility and large powers, and which is competent to exercise those powers in the general public interest. At the present time such is not the case. The ordinary city government in the United States is so organized that it usually lacks the necessary power to undertake in an efficient manner comprehensive schemes of public improvements. It is either too much restricted in its authority by the State Legislature, or else it is rendered incompetent by the local distribution of power between the Mayor and the Common Council. As we all know, these municipal governments have, in times past, been the willing victims of the local transit and other similar interests, and the agitation for municipal reform has been obliged not merely to insist upon the subordination of the public service corporations to the public interest, but it has in many cases also been obliged to seek the enlargement of the powers of the local government. Only by such an enlargement of powers are these governments placed in a position really to assert the public interest against that of the local corporations. It will be found in the long run that the æsthetic improve-

ment of our large cities, according to any comprehensive plan, will require an analogous reorganization, whereby the municipal authorities will be in a position to assert the public interest in this respect against the special interest, which most insistently opposes almost all such improvements. The special interest which I mean is that of the owners of real estate in our large cities.

A great deal has been written about the subordination of the American municipalities to the selfish and corrupt purposes of local franchise corporations, but when the history of American municipal mis-government comes to be written in its final form, the verdict will be that the interests of the owners of real estate have been perhaps the gravest obstacle to the making of the greater and the better American city. Our cities have been from the start governed in the interest of the owners of landed property. Such property-owners could very well afford to pay the higher cost of corrupt and inefficient municipal government, provided the local authorities left them free to reap to the fullest extent the advantage there was to be reaped from the growth of the cities in population and business. Municipal government in the United States, that is, has on the whole, been subordinated to the interest of a gigantic real estate speculation, which has ignored economy, good looks, convenient planning and all other considerations of general public interest in the effort to encourage rapid and unregulated growth. The existing plan of the old City of New York was designed almost exclusively for the purpose of affording block and lot units, which would be easy to buy and sell; and this purpose was frankly avowed at the time it was adopted. At present the local owners of real estate are always the most stubborn opponents of improvements in the public interest which in any way impair their chances of reaping their unearned reward from the growth of the city. It is their opposition which has prevented the adoption of the Burnham plan in San Francisco, and it will be found in the long run that the radical and comprehensive improvement of our large cities in convenience and good looks will be effected only, as it were, over the dead body of the great American real estate speculator. The interest of the real estate speculator demands congestion and concentration of business and population, which enormously increases real estate values along particular lines and at particular points, while the interest of the whole people in a beautiful and convenient city demands the distribution of population and business in the most liberal manner and according to an organic plan. The local interest of the individual owner of real estate in his particular property outweighs the public interest in a good general lay-out. The conclusion is, consequently, that before the visions of the municipal art reformers can ever be carried out, two vital changes in American municipal government will be necessary. Their powers will have to be increased in several different respects, and these powers will have to be exercised in a manner which makes the individual owner of real estate the public servant instead of the public master.

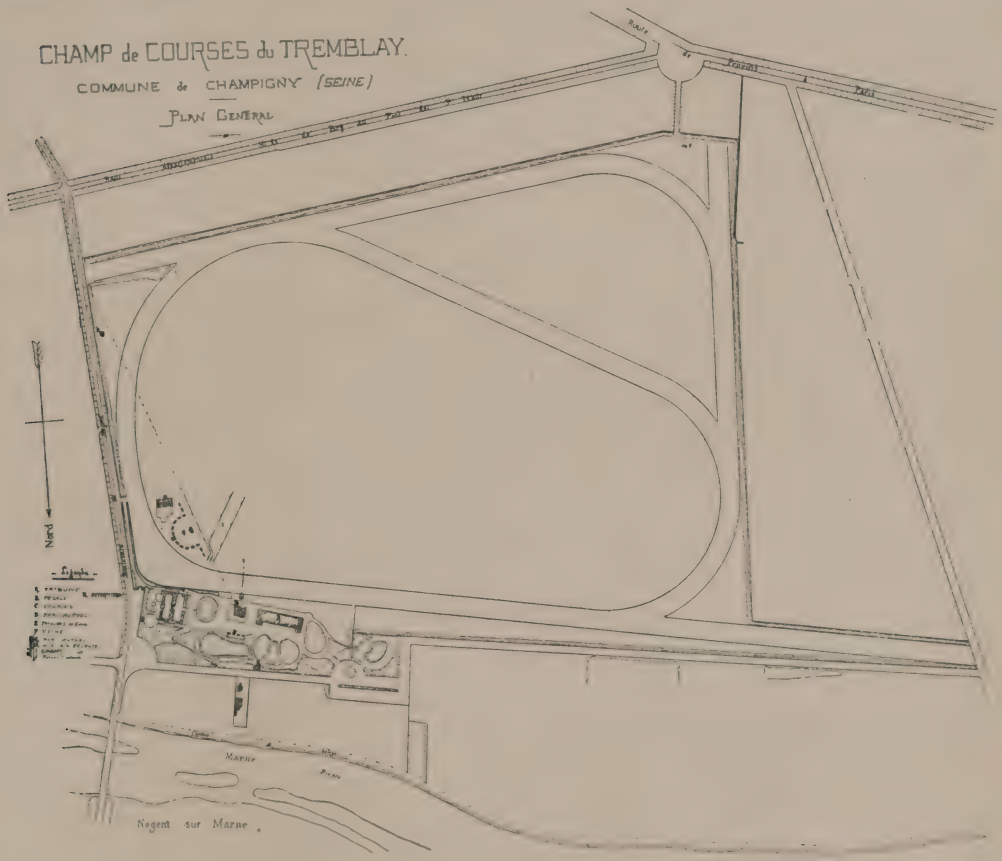
Herbert Croly.

A New Race Course for Parisians

A Paris horse-racing society found itself in need of a new race track. This was rather unusual. The powerful bodies that control horse-racing in France have long had their permanent installations. What, indeed, would the Bois de Boulogne be like without the Auteuil and Longchamps race-courses? They were constructed some thirty or forty years ago, according to plans which have remained unchanged ever since and which are similar to those of the majority of race-courses all over the world. The Grand Stands are placed mid way along the straight, an arrangement which has seemed so evidently proper as not to call for discussion.

Two years ago the *Societe d'encouragement* recognized the necessity of rebuilding the stand at Longchamps, and entrusted the task to M. Giraud, the architect who designed the Petit Palais; but the Longchamps course, that classic ground for great races, remained as it had always been.

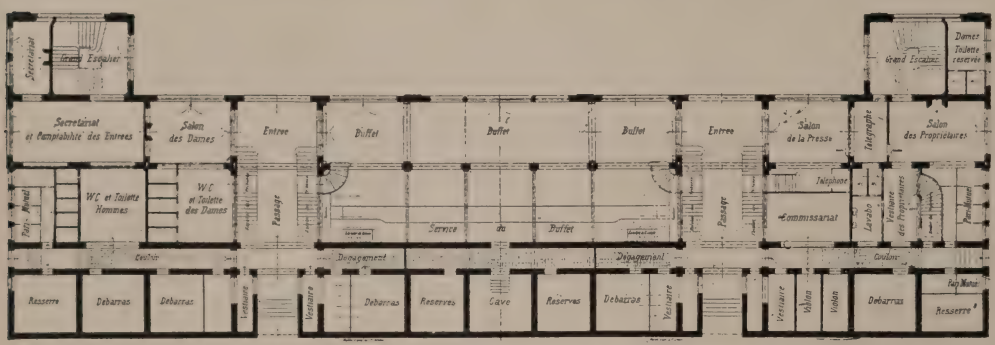
The *Societe de Sport* has had to create a new race-course, the land of the one at Colombes having been taken over by the owner for the purpose of covering it with houses, for which there



CHAMP DE COURSES DU TREMBLAY—GENERAL PLAN.
Commune de Champigny (Seine), France. M. Raquin, Architect.

is a growing demand in that western suburb of the capital. The society chose a young architect of great talent, M. Octave Raquin, to wrestle with the problem, which was the following: The ground for the new race-course was almost square in shape, and looked upon the Ile de Beauté and the windings of the Marne. The stand was to be so placed as to afford the occupants the best possible view of the track and at the same time enable them to enjoy the lovely landscape presented by the tree-lined river and the islands. A race-course also comprises a weighing enclosure, stables for the runners and, here in France, elaborate accommodation for the originality of the new race-course. As can be seen by the plan here reproduced, stand, weighing-room, etc., are all grouped together in the left-hand corner of the course, and the entire length of ground thus extends in a straight line in front of the winning-post. Moreover, with the stand placed in this spot a much better view of the track as a whole can be had. This is a very interesting innovation and one worthy of consideration for new race-courses wherever practicable.

A stand should, while protecting the spectators from the sun and the rain, allow them a clear view of the track. To attain this end, M. Raquin has re-



CHAMP DE COURSES DU TREMBLAY—THE GRAND STAND—GROUND FLOOR PLAN.
Commune de Champigny (Seine), France. M. Raquin, Architect.

the *Pari Mutuel,* the only form of betting which the law now allows.

The great novelty of the new racing track—*L'Hippodrome du Tremblay*—lies in the position chosen by the architect for the stand and the weighing-room. M. Raquin had the courage to call in question the symmetrical arrangement which hitherto has always been adopted for the race-courses of the entire world. "Why," he asked himself, "should the stand be placed halfway along the straight?" The important point, he considered, was that the straight should be as long as possible before the winning-post, so as to allow of the race being seen by all the spectators on the stand. For that, the stand had to be located at the corner of the track, but nobody had thought of putting it there. It is this feature that constitutes placed the columns which ordinarily uphold the roof by an iron veranda the span of which is ten meters, or just inside of thirty-three feet. It is a very daring and ingenious innovation. Until now, verandas of such large span have not been attempted in France, whatever may have been done elsewhere. It is an excellent thing to find it applied for the first time to the grand stand of a race-course.

On race-course stands, which are always crowded, the stairs are extremely inconvenient, and they are usually blocked with people, making it difficult to pass. M. Raquin has done away with the stairs. His stand is made in tiers of a height of 40 centimeters, about 15½ inches, with a step between each tier. The stand is thus transformed into one broad stairs rising by steps of 20 centi-

meters, 7¾ inches. It must be noted moreover that with 15½ inch tiers, each row of spectators has a good view of the track.

The manner in which this Grand Stand is fitted up shows a thorough grasp of the requirements which such an installation ought to meet. On the ground there are the attendants' quarters, the secretary's office, a ladies' room, a press-room, an owners' room, and a refreshment-room. Two broad staircases, located in the two square towers flanking the stand, lead up to a gallery, where we find the offices in which the *Pari Mutuel* is conducted. The spectators are thus able to bet without leaving the stand. Hitherto, they have had to run to the *Pari Mutuel* pavilions. On the roof of the stand there is a large uncovered promenade.

Let us now examine the construction of this commodious stand. As the illustrations show, it consists of a steel frame, which frame has been filled in with pink-colored bricks. For the platbands and socles white stone has been used. M. Raquin realized that it would be absurd to attempt to disguise his scheme of construction. He has, on the contrary, emphasized its main lines, so that one sees the anatomy of the building at a first glance. Its brick pillars are simply pillars, and the whole construction is open, as becomes a construction in metal. There is no more walling in it than there is in Gothic construction, which also, although different materials were used, rested its roof on piles. In this way, the Tremblay Grand Stand, instead of being a deception, architecturally speaking, as is so often the case where steel is employed, shows itself honestly for what it is, and pleases by this very frankness. With its widely-spaced pillars and large windows, this stand is a race-course stand, and nothing more. This is a merit.



CHAMP DE COURSES DU TREMBLAY—THE ENTRANCE.

Commune de Champigny (Seine), France. M. Raquin, Architect.



CHAMP DE COURSES DU TREMBLAY—THE STABLES.
Commune de Champigny (Seine), France. M. Raquin, Architect.



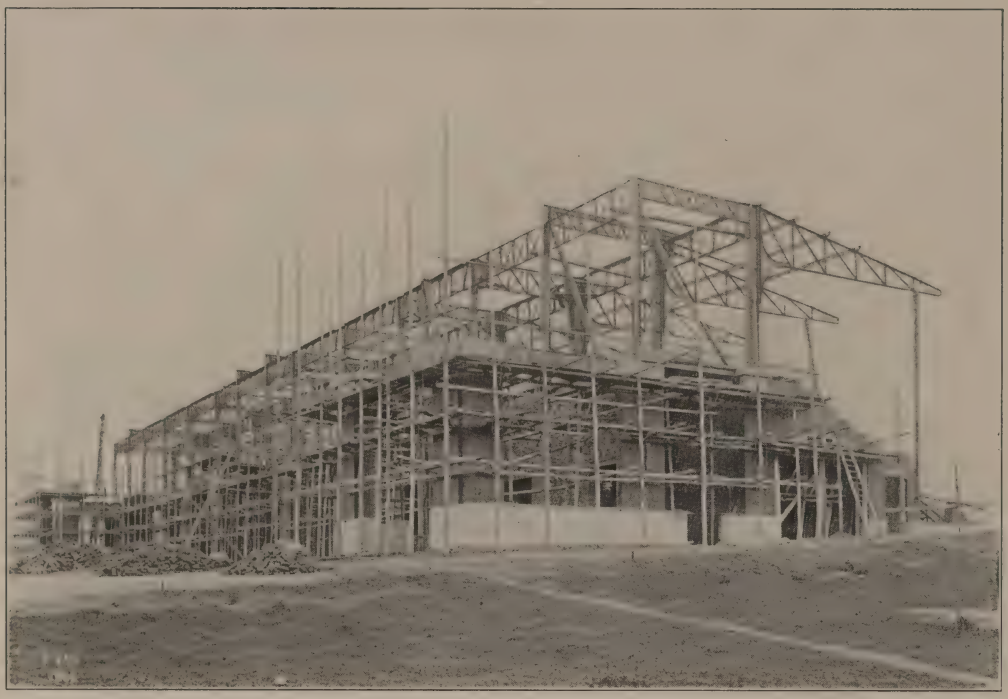
CHAMP DE COURSES DU TREMBLAY—BACK VIEW OF THE WEIGHING PAVILION.
Commune de Champigny (Seine), France. M. Raquin, Architect.



CHAMP DE COURSES DU TREMBLAY—CENTRAL BETTING PAVILION FOR THE PARI MUTUEL.
Commune de Champigny (Seine), France. M. Raquin, Architect.



CHAMP DE COURSES DU TREMBLAY—FRONT VIEW OF THE WEIGHING PAVILION.
Commune de Champigny (Seine), France. M. Raquin, Architect.



CHAMP DE COURSES DU TREMBLAY—THE STEEL FRAME OF THE GRAND STAND—REAR VIEW.

Commune de Champigny (Seine), France. M. Raquin, Architect.



CHAMP DE COURSES DU TREMBLAY—THE STEEL FRAME OF THE GRAND STAND—FRONT VIEW.

Commune de Champigny (Seine), France. M. Raquin, Architect.

The weighing pavilion is placed alongside the Grand Stand. This is another innovation, for generally it has been put behind, without any particular reason. This pavilion has a specific purpose; it is there that the jockeys are weighed before and after the race. Furthermore, it was necessary to provide therein a bath-room and a dressing-room, a room for the committee and their guests, and accommodation for the trainers.

The different views of this pavilion which are here given bear witness that M. Raquin has cleverly utilized the very complexity of this plan to design a picturesque edifice which should fully meet every need while being most pleasing to the eye. Here he has used the same materials as in the Grand Stand, namely, pink bricks and white stone, but in this case the metallic framework had no *raison d'être*.

Another indispensable building on a French race-course is the *Pari Mutuel* pavilion, on which are posted the results of the betting operation for each race, the names of the horses winning and placed, with the amount they have brought to their backers. This pavilion is very happily conceived, and we admire the good sense displayed in the matter of materials.



CHAMP DE COURSES DU TREMBLAY—GRAND STAND AND WEIGHING PAVILION.
Commune de Champigny (Seine), France. M. Raquin, Architect.

We also reproduce a photograph of the stables for the runners. They comprise fifty-six stalls. Here white brick alternates with red.

The Tremblay race-course buildings embody all the latest improvements, and hence it seemed to the undersigned that plans and photographs of it could not be without interest to his American readers.

Jean Schopfer.



JESSE TREE WINDOW AT THE CATHEDRAL OF AUTUN, FRANCE.



NORMAN SACRED TREE AT ASHFORD, ENGLAND.

The Jesse Tree

A comparative study of myths and symbols, together with their migration and transmutation, points to the unity of the human mind: to a period when all mankind was in possession of certain fundamental truths; hence making against the popular theory of development from barbarism to civilization, and in favor of the theory of degeneracy; a falling away from primal truth.

Just how the correctness of either of the above theories is to be demonstrated beyond dispute is difficult to say, and probably the demonstration is impossible. There is one fact, however, on one side of the question, which is incontrovertible; that is, that there is no record of a people passing from a state of savagery to one of culture without first coming in contact with a nation more civilized than themselves, who either brought them new truths, or stimulated them to develop a faintly remembered or obscured truth: a part of their race traditions.

The history of the tree-symbol and attendant myths apparently tend to establish the correctness of the theory of degeneracy. Starting with the cosmic symbolism of the tree, and tracing it among all people through its various forms, such as the tree of life, the tree of death, the tree of knowledge, the tree of temptation, the tree of plenty, the tree of salvation, there will be found a correlation in which there is a conservation of a given truth, whether it relates to something in the past or in the future, even when the dogma taught is false, for underlying the symbolism of the myth there is always a basic verity: a remembrance, as it were, of a primitive truth.

The tree-symbol, like other world-wide symbols, discloses to the student the identity and persistency of tradition. Although here, as in many other cases, the tradition is intermixed with error; nevertheless, because of the basic truth it contains, it is of great value to the scientific inquirer, and makes evident that due weight in all historical and archæological investigations must be given to the probabilities of the truth of a persistent symbolism, before drawing a conclusion, or the investigator may find his conjecture brought to naught, overridden by the fidelity of the tradition to the original facts.

Again, the tree-symbol demonstrates that the *past* is often found in the *present*, as it now has its place, as a symbolic ornament, just as it had in by-gone ages, both in the religious and decorative arts of almost all, if not all, the civilized or semi-civilized nations: in other words, it has been employed as a teaching ornament from the most remote times, and is so used to-day. In looking back it will be seen that it held a most important place in Semitic art, attaining its highest artistic expressions during the Assyrian ascendancy; and that from Mesopotamia it migrated, on one hand to the whole of Western Asia, and from

thence around the Mediterranean basin; while on the other hand, it passed into Persia, and from there all over Eastern Asia, finally reaching in its migration the New World, possibly direct from Java, as the Sacred Tree of Central America strongly resembles that of the Javanese.

In portraying this symbol each nation made choice of the tree or plant it deemed the most precious, hence it is purely arbitrary, as the symbolical meanings of the trees, no matter in which group they are placed, are closely allied and overlap one another, which is easily understood when it is remembered that all of the symbolic trees are offspring of the Cosmic Tree: a symbol of nature, of the universe, and essentially of the creative power. The universality of the symbolism of the Cosmic Tree is made clear by the words of the ancient hymn



THE SACRED TREE OF ASSYRIA.

sometimes depicted as a palm, or a cypress, or a pomegranate, or a fig, or an oak, or an ash, or an apple, and not infrequently as a vine; and often, no matter what the tree may be, its flower is the lotus: pre-eminently the "Flower of Life," redolent of the idea of resurrection and immortality.

For the purpose of study, Sacred Trees are divided into three groups, viz., Cosmogonical, Paradisaical and Prophetical; these divisions, however, are

of Erider—a city given up to religion—sung at the very dawn of history: "Its seat (root) was the central place of the earth, its foliage was the couch of Zikum the (primeval) mother. Into the heart of its holy house which spread its shade like a forest hath no man entered; there is the home of the mighty mother, who passes across the sky. In the midst of it was Tammuz* (the sun): the

*Tammuz; his name signified literally "the son of life." Babylonians and Assyrians. A. H. Sayre, New York, 1899.

spouse and child of Zikum." The singers of these words believed the rustling of the leaves of this sacred tree was the voice of the divinity, hence by listening to the rustling a foreknowledge of the Divine Will could be gained, and by entering its shade men became as "God, knowing good and evil." Thus it is seen that in the Cosmic Tree of Erider there



A JESSE WINDOW, EARLY XIII. CENTURY—UPPER PART.

is wisdom, prophecy and life; in other words, it belongs in turn to the three groups. The symbolic relationship between the Cosmogonical Trees and all other sacred trees is further illustrated by the Cosmic Tree of the Scandinavian mythology, a tree of three roots: the root of life, the root of death and the root of punishment; its branches reaching to heaven. After the introduction of Christianity among the Scandinavians, and before it had gained a firm hold upon the people, and while the old superstition was still rife, it was said that the Child Jesus lived in its topmost branches.

In passing it is well to note that many of the sacred trees, in addition to their inherent symbolism, are also calendars, like the tree described in the Book of Revelation: *the tree of life which bare twelve manners of fruits, and yielding her fruit every month,* and like that of the Chinese, that bore a fruit every day for the first fifteen days of the month, after which one fruit fell off each day until the thirtieth day; if, however, there were only twenty-nine days in the month, one fruit withered without falling off.

After the establishment of Christian-

ity the tree-symbol took a new lease of life and re-entered Europe by the road of Byzantine art under three forms: The Tree of Paradise, the Tree of Life and the Jesse Tree. The first was usually represented with the serpent wound about the trunk, Adam standing on one side of the tree and Eve on the other. The second one was portrayed in a variety of ways; one of the most interesting was that called *Peredexion*, a fruit tree with doves upon its branches, eating the fruit, and on the ground near to the tree, but not under its foliage, a dragon, the enemy of the doves, but who is afraid of both the tree and its shadow, so that if the shadow is from the west the dragon is shown on the east of the tree and vice versa; and there was always at the feet of the dragon a number of dead doves. The tree symbolized the Holy Church, the shadow God the Son (the Highest shall overshadow thee. Luke I., 35); the fruit, the gifts of the Holy Ghost (Isaias II., 1-2); and the doves, Christian souls (Be ye harmless as doves. Matt. X., 16). The lesson is that a Christian must do no evil, but hold strongly to the teaching of wisdom, feed upon the bread of life, never stray from the church, keeping within the shadow of Grace. The third one, the Jesse Tree, was of far more decorative and symbolic value than the others, and began to grow and bloom in the garden of Christian Art in the very early Middle Ages; in the Twelfth and Thirteenth Centuries it became a common subject of illustration in manuscripts, embroideries, and a marked decorative feature in both the outside and inside of church buildings. For example, at Chartres it is carved in stone over the north porch of the Cathedral, and it is again shown in colored glass in one of the west windows of the same edifice.



A JESSE WINDOW, EARLY XIII. CENTURY—LOWER PART.

In the eyes of the superficial observer the Jesse Tree, outside of its decorative quality, is merely a pictorial genealogy of Christ. Such a supposition, however, is erroneous, for it is not only genealogically, but it is also symbolically the Tree of Life; in fact, it is the Tree of Salvation: an epitome of the doctrines



A JESSE WINDOW, EARLY XIII. CENTURY—MIDDLE PART.

of the Incarnation and Atonement: a pictorial emphasis of the prophecies that prove the divine origin of its fruit. Just when or where it was first employed, or who invented it, is not known; it was founded on the following words of the prophet Isaias:

"And there shall come forth a rod out of the root of Jesse, and a flower shall rise up out of his root. And the spirit of the Lord shall rest upon him: the spirit of wisdom and understanding, the spirit of counsel and of fortitude, the spirit of knowledge and of goodness. And he shall be filled with the spirit of the fear of the Lord. In that day the root of Jesse, who standeth for the ensign of the people, him the Gentiles shall beseech, and his sepulcher shall be glorious."

And on the words of St. Paul, recorded in the Acts of the Apostles:

"I have found David, the son of Jesse, a man according to my own heart, who God, according to His promise, hath raised up to Israel a Saviour, Jesus."

The pictorial Jesse Tree is generally composed of a tree or vine, together with representations of the Christ, the Blessed Virgin, Jesse, the kings and the prophets. Jesse, at the foot of the composition, recumbent, with a tree or vine growing out of his loins; along the line of the trunk the royal ancestors of the House of David; just below the top of the tree the Virgin Mother, and to crown all the figure of the Redeemer, at once its blossom and fruit, surrounded by seven doves, emblematic of the gifts of the Holy Ghost. Sometimes this arrangement is varied by the tree finishing with a representation of the Holy Mother with the Divine Child in her arms. Among the foliage, on the right and left of the trunk of the tree, are grouped the prophets, who foretold the birth, death, resurrection and everlasting priesthood of the Lion of the Tribe of Juda; as a rule they carry a ribbon or label on which is inscribed the first words of their prophecies, although in some Jesse Trees the ribbon is omitted, the prophets simply representing the Jewish people, whose whole history was a perpetual prophecy of the expected king. The prophets portrayed and their words employed were the following:

Isaias: "Behold a virgin shall conceive and bear a son, and His name shall be called Emanuel."

Ezechiel: "Behold, I myself will seek my sheep and will visit them; I will seek that which was lost; I will save my flock; I will gather you together out of all the countries and will bring you into your own land."

John the Baptist: "Behold the Lamb of God; behold Him who taketh away the sins of the world."

Joel: "He shall be the hope of His people, and the strength of the children of Israel."

Amos: "And He will utter his voice from Jerusalem."

Michaes: "Behold the Lord will come forth out of His place; and he will come down, and will tread upon the high place of the earth."

Habacuc: "God will come from the South and the Holy One from Mount Pharan. His glory covered the heavens, and the earth is full of his praise—death shall go before His face."

Sophonias: "In that day it shall be said to Jerusalem: Fear not; to Sion: Let not thy hands be weakened; the Lord thy God in the midst of thee is mighty. He will save; He will rejoice over thy gladness."

Aggeus: " I will move all nations; and the desired of all nations shall come; and I will fill this house with glory."

Nahum: "Behold upon the mountains the feet of Him that bringeth good tidings and that preacheth peace."

The Jesse window at Chartres, a work of the year 1145, is the finest existing example of the mediaeval conception of this form of a sacred tree. It is divided into three compartments in width and seven in height, these divisions being emphasized by the iron armature, which sustains the weight of the glass. Through the central compartment grows the tree, springing from Jesse, who lies asleep at the base of the window, and upon the branches, which extend into the side compartments, stand the figures of the prophets, while the ancestors of the Redeemer are arranged along the trunk. In color this window is a most exquisite composition, aglow as it is with brilliant and burning reds tempered with blues of pure limpid sapphire tones, and violets melting into dark rich purples, in conjunction with deep yellows and soft browns, dark and light greens passing into olives, and all of a gem-like preciousness in their beauty. A modern observer of discernment, upon seeing this window, was led to utter a great truth concerning all colored windows. He said: "Is not glass painting, of all arts, that in which God does most to help the artist; the art which man, unaided, can never make perfect, since the sky alone can give life to the color by a beam of sunshine and lend movement to the lines? In short, man fashions the form, prepares the body and must wait until God infuses the soul."

The Jesse Tree was always a favorite design with glass painters in every age of their art, and was widely used in France and England, not only in the great cathedrals and larger churches, such as Chartres, Rheims, Beauvais, Canterbury and York, but also in many parish churches and monastic chapels, and they are today the best windows to study to acquire a knowledge of the various changes in style of design that has taken place from period to period.

The full decorative value of the Jesse Tree is no doubt to be seen in stained glass windows, yet it is also seen to advantage in illuminations, embroideries and mural paintings, on account of the color employed; nevertheless it is almost as attractive when carved in stone or



MEDIAEVAL JESSE WINDOW IN THE LADY CHAPEL AT LUDLOW, ENGLAND.
Largely a restoration made by John Hardman & Company, of Birmingham.



JESSE TREE REREDOS IN THE CHAPEL OF ST. ANNE, BURGOS CATHEDRAL, SPAIN.



JESSE TREE REREDOS AT BRAUNAU, GERMANY.

wood, or wrought in metal, as may be seen in the trees over the royal porches of the Cathedrals of Amiens, Rheims and Rouen, as well as on many choir stalls, church chests and doors in France and Germany. The last named country possesses the finest mediaeval painted Jesse Tree now in existence, which covers the whole ceiling of St. Michael's Church at Heldersheim, a work of the Twelfth Century; a most interesting example of Gothic art.

So decorative is the Jesse Tree motive that even engravers have essayed to use the design in a pictorial way, as witness the celebrated etching by Israel von Meckenen, and as for printers and binders of prayer books, they have constantly employed it as an illustration or as a decoration for their bindings from Thielman Kervier in 1497 to Burns and Oates in 1907.

The Jesse Tree still flourishes in the garden of ecclesiastical art. The preference, however, being given to the conventionalized rather than the pictorial form of this ancient symbol, except in the case of windows, where it is often depicted in all its fulness, such as the one in the Church of the Advent, Boston; in the First Presbyterian Church, Pittsburgh, and Christ Church, Poughkeepsie.

It is coming more and more in vogue, as it offers a great opportunity for the artist in colored glass to display every side of his art to advantage.

Caryl Coleman.



A CELTIC TREE OF KNOWLEDGE AT FARNELL, SCOTLAND.

The Two Carraras

Whole Mountain Ranges of Rare Marbles, Both in Italy and Vermont, Which Have Supplied the World's Greatest Sculptors and Architects Since the Dawn of Art.

Picture an ocean of snowy mountains, crest beyond crest, range above range, until the hindmost is lost in the pearly mist of an Italian sky. And a narrow valley running inland from the Mediterranean and rising till it reaches the bil-

that the grandest sculpture man ever chiselled—the colossal "Moses" and "David" of Michelangelo—have lain in embryo. And the statues and monuments of the earth's greatest—kings and poets; great divines and warriors.



GENERAL VIEW OF THE MARBLE COUNTRY IN THE AMERICAN CARRARA, PROCTOR, VERMONT.

lowy foot hills robed in olives and vines, brought up sharply by the vast masses of white—"the snow the gods had made eternal."

This is Carrara, the marble world where 11,000 men are at work with great teams of oxen and old-world blasting methods, supplying the sculptors of the world with statuary stone. It is here

The walls and columns of the chaste and classic Parthenon of Athens were hewn from these dazzling mountain walls; with the Roman temples of Mars and Jupiter, and all the exquisite material that changed the "city of brick" into the serried marble palaces of Imperial Rome, Mistress of the World.

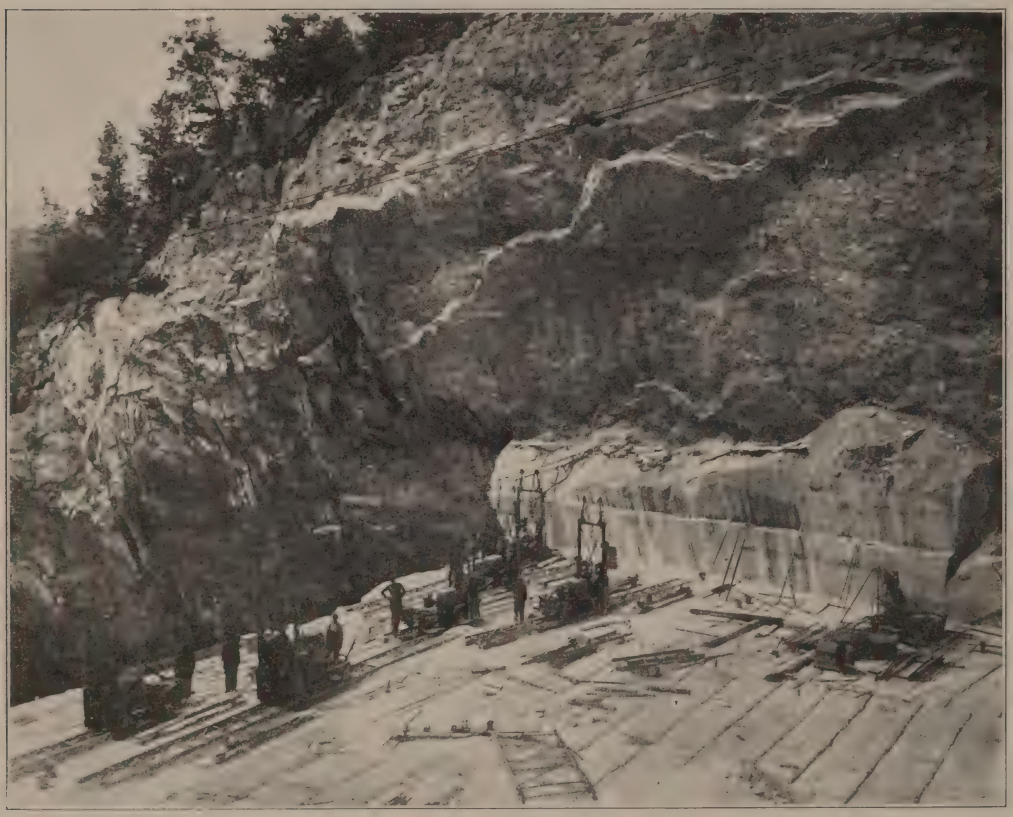
From this one range the world draws

its sculptors' marble to-day, as it has done from prehistoric times of Goth and Vandal and Lombard. The Marble World has known the sway of Pisan, Luccan and Genoese Republics, as well as that of the Tyrants of Verona and Milan. I left the main line at Avenza, near Italy's great Naval Arsenal of Spezzia. Carrara's port is Avenza; its old turreted and pinnacled castle looks down on a white world of pure marble—

iron-tipped goad that has come down from Roman days.

I noticed some of the great branching horns were painted vermilion to show when a bullock was vicious. And often the cumbrous drays are mere rough sledges of unhewn timber mounted on old Roman wheels,—often enough solid discs of wood or iron. The load may consist of a block weighing 60 tons.

Here is a whole countryside of 45,000



THE CUTTING MACHINES AT WORK IN THE AMERICAN CARRARA.

the *marmio statutario*, known to every artist.

A quaint little line covers the five miles from the port to the marble city, and throws out branches into the lateral valleys. Side by side with the fussy little engines you will see great toiling bullock-teams—eighteen horned monsters to each dray, piled high with colossal rough-hewn blocks. A man sits between the yoke of each span armed with an

people, all living on marble. The air is grey with the dust. Houses and workshops are built of it; at every corner of the villages you will see huge blocks, with youngsters perched on top, working away with mallet and chisel. But, of course, the far-famed quarries—470 of them, worked by 9,000 laborers—are the center of attraction; and the rumbling boom of explosions in the lofty marble mountains seem to call one to their heart.

There is but one car on the miniature line which is used for passengers. It has no roof, but is fitted with wooden seats and leather cushions; none but quarry-owners use it. Behind us trailed four other cars laden with miscellaneous goods, food, bedding, and general necessaries for the workers up in the mountain, who only come into the towns and villages at long intervals.

blasting. And so hewn and blasted have the marble mountains been for a thousand years that they have been cut and riven into peaked and pinnacled masses, like vast old cathedrals.

The deep boom of the explosions grew nearer; and craning out from the car I beheld 50-ton masses tumbling from the white face of precipices like pebbles. Enormous as the distances are up here,



THIS VIEW GIVES A GOOD IDEA OF THE GREAT SIZE OF THE BLOCKS AS THEY ARE QUARRIED; NOTE THE SIZE OF THE WORKMEN BELOW.

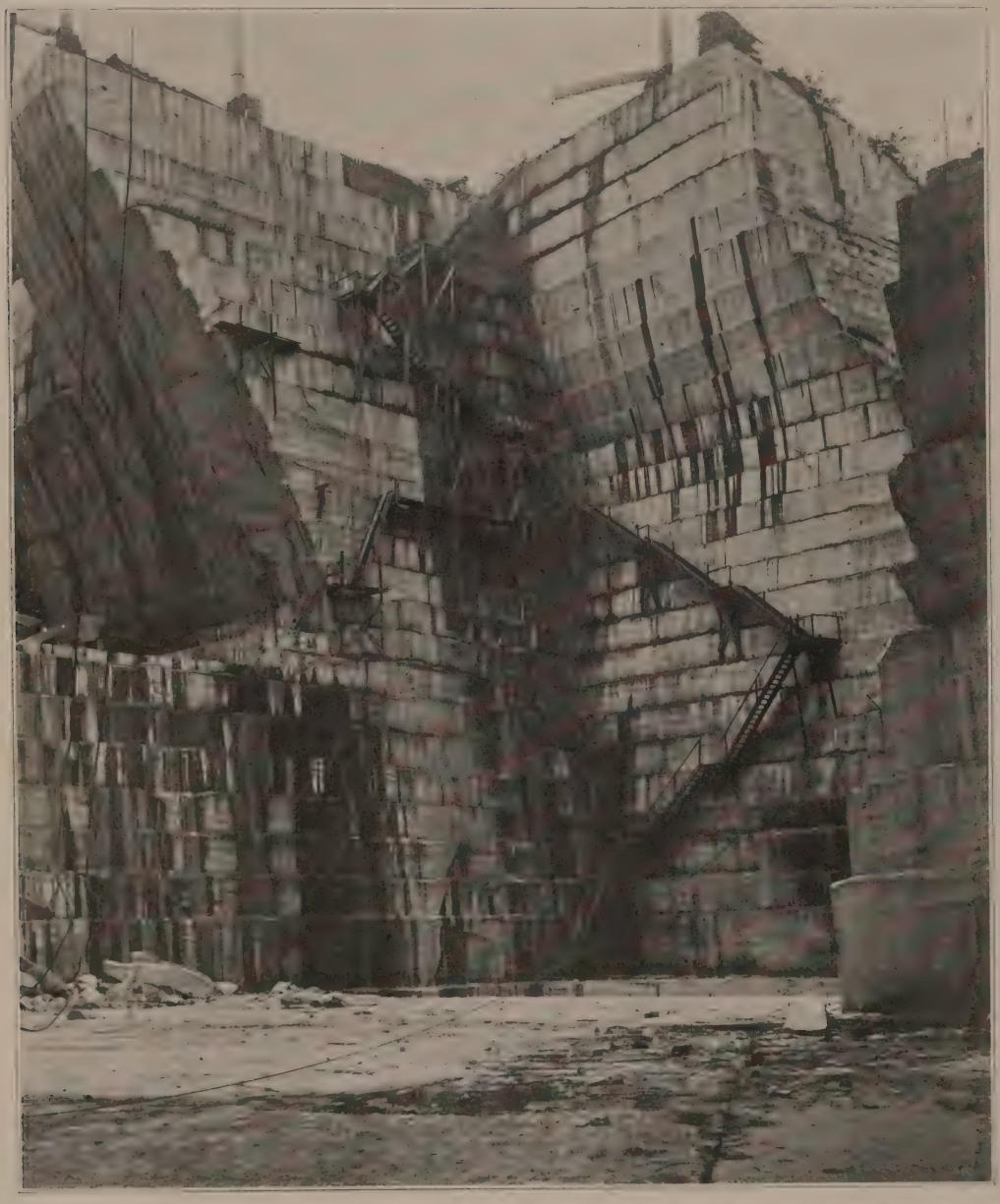
As we climbed the hills I noticed that the very tunnels and track-ballast were all of marble. Far as the eye could reach appeared torrents and oceans of the glistening white stone, apparently enough to rebuild all the cities of earth and leave enough for their tombs! At frequent intervals I noticed the old disused Roman quarries. Then, as now, there was no tunneling, but all face-

the tiny black specks one knows to be men stand out as clearly as flies on a wall, by reason of the amazing whiteness of their background.

One black spot would appear; then one heard a blast on a horn, answered by others and taken up by the echoes; which died away gradually. Next one saw swarms of the little black "ants" speeding to the shelter of bomb-proof or case-

mate. For a few moments not a soul was seen nor a sound heard. Then came the deep boom of the explosion; a cloud of smoke; a faint rattle; and a far-distant shower of "pebbles," some of them weighing from 30 to 50 tons each.

A moment later the "ants" swarmed out again from all sides, drilled more holes, put in fresh charges, and once more waited for the welcome sound of the blasting horns, which means a few minutes' interlude. Sometimes a great mass is sawn from the living rock by an endless wire passed through a drilled



THE DEPTH OF THE QUARRY IS HERE WELL SHOWN BY THE NUMEROUS FLIGHTS OF TEMPORARY STAIRS.

hole, and revolving over great drums. The flinty gravel, sand and water for this operation are brought from long distances; the water is often conducted by flumes from the mountain streams.

The blasting, as might be supposed, is a delicate operation,—not only from the safety point of view, but also because too large a charge of powder or dynamite would result in flawed marble. Dynamite is only used to clear a mountain-face or precipice in order to get at the best quality of stone. A dynamite blast in the ordinary way would result in mere rubbish, or marble broken into fragments too small to be of value.



ONE OF THE GREAT CRANES FOR LOADING BLOCKS ON TO THE TRAINS.

Many of the quarry-owners employ their own men for the work of production, and contract for the transport of the marble to the mountain rail-head or wagon-road, and thence on to Carrara or direct to the "Marina," or landing-place of Avenza. The men upon whom the most difficult work falls are known as the *lizzatura*. These convey the marble over the trackless slopes between the quarries and the rail-head.

Take a great fragment of marble detached by the blast. When it has stopped rolling its weight is estimated at perhaps forty tons, and it is roughly squared into a block. Then the dexterous *lizzatura* set about getting it down—a work involving strategy and tactics of no mean order. Stout posts are driven into the loose stones and marble waste, and the great block is raised on to a soaped skid of hard beechwood by crow-bars and screw-jacks. But before doing this the mass is secured by five-inch hempen cables, and allowed to slide slowly down.

A continuous slip-way is provided; but the work is most critical. And, like miners, these men are reckless to a degree. Formerly the *lizzatura* used but

one cable to hold back the ponderous block, until the Government, rightly regarding their work as dangerous, passed a law that at least three cables should be used. The men work in gangs of fifteen, and five or six deaths take place every year through the workers being crushed.

Their work ends when they have hand-levered the giant mass over rollers onto the low freight car. The *caravana*, or masters of the bullock-wagons, also have a terribly toilsome task, for the mountain road down to Carrara is more like the wild, stony bed of a torrent than a beaten road. At one time there was some talk of improving the port of Avenza, so that big steamers might take the place of the smaller coasters now engaged in the trade. But as Carrara produces only marble, and no vessel could load up with it exclusively on account of its great weight, the scheme was abandoned.

The men engaged in this work are sturdy, hard-working mountaineers, not in the least like the Italians of the town. Some of them have to climb as much as six miles at dawn to reach their work, and their pay only ranges from four to five dollars a week! The employment is hereditary; and as soon as the shy little boys can be of the slightest help they are taken up into the quarries and put to work.

The best quarries lie in the valleys of Torano, Miseglia, Bechsano and Colonnata. Here the very finest white and colored marbles are found; but the loveliest statuary marble of all comes from Serravezza, nearer to Massa Carrara. The average cost of ordinary marble at the "Marina" of Avenza is about $15 a ton, the transport from the quarries costing about $3 a ton. The total annual output is about 200,000 tons, and the supply appears inexhaustible. Carrara as a marble producer has never had a rival; and with a whole mountain range of the pure white stone above and behind it, it seems likely to keep its supremacy for ever.

But we have a Carrara of our own here at home in the Marble Belt of Vermont, and it has been worked, though by vastly different methods, for over a hundred years. Prior to 1800 a little surface marble was used for funeral monuments; and generations later the vast deposits were worked in a casual way. But no one then saw much in an industry which is to-day so prosperous that one concern alone has an output of $2,500,000 worth every year!

And to think that only sixty years ago a farmer, weary of wrestling with Vermont's stony soil, traded all his acres for an old horse, wherewith to make his escape from the Green Mountain State! Yet had that man but gone deeper, he and his descendants must have become millionaires.

For beneath that arid hill-farm lay some of the most precious marble deposits the world has ever seen, such as have supplied architects, builders and sculptors throughout the length and breadth of this great land.

America's Carrara is found at West Rutland, Proctor, Brandon, Pittsford, and other points in that locality, which have given up in vast quantities every known variety of marble, including a precious stone rivalling that of Pentelicus, with which was constructed the immortal Parthenon, the Hippodrome, and other classic structures of ancient Athens —not forgetting the imperishable material in which Phidias and Praxiteles wrought their marvelous sculpture.

Marble veins appear to thread the State from north to south, some of them a blackish-blue, others red and green; mottled, striped, wavy, or variegated in a thousand ways. In the midst of this immense and important industry looms the figure of Senator Redfield Proctor, who became identified with the American Carrara just prior to 1870, when the State was credited with marble sales barely totalling $130,000 a year.

An inspiring sight is it to visit the stupendous quarries at West Rutland, where one peers down in the dazzling stony abysses more than 300 ft. deep and perhaps a third of a mile long. Here is one colossal vein containing several quarries, supported by massive rock pillars, which appear to hold suspended the entire hillside.

Standing on the brink, one gazes down through steam and smoke, marveling at

the hive of industry below, whose rattle and hum come faintly up. As in the Italian Carrara, the thousands of workers look like tiny ants; great, powerful engines, mere toys, and mighty cables and chains like the strands of a spider's web.

Slender stairways, clinging like vines to the precipice face, and zigzagging back and forth, lead down to the quarry floor. A dangerous and giddy journey for the novice, comparable only to escaping from one of our loftiest city skyscrapers by means of the external fire escape.

Here marble is not blasted for fear of shattering. It is, in fact, cut out in immense rectangular blocks weighing many tons. Needless to say, with characteristic American ingenuity, curious and powerful machines have been devised for the purpose; and by their aid a solitary skilled operator will do work which formerly took 50 or 100 men.

The "channeling machines," as they are called, run back and forth on tracks, and are provided with powerful drills, which cut slits about an inch wide and up to 10 ft. in depth. Slow work, of course, and depending much on the marble's quality. Sometimes a slab 20 ft. long and 8 ft. deep will take 24 hours of constant work before it can be drilled from its position.



MARBLE FOR AMERICA'S BEAUTIFUL BUILDINGS—PILES OF BLOCKS AWAITING SHIPMENT.

And when a perpendicular cut has to be made, steel drills of great power come into play, driven by steam or electricity. One could not imagine a greater contrast with the Italian methods. Steel wedges are sometimes used, and the loosened block is raised by great derricks, after which it is sent to the mill to be sawn into slabs of the size required.

This sawing is curious work, dating—

at all events, in principle—back to ancient times. Sand, running water, and a toothless iron saw, are necessary for this work. A powerful machine moves the saw back and forth against the stone, while a stream of water holding sand in suspension, pours constantly over it.

The sharp edges of the sand cut the stone as the iron strip works small pieces of the silicon back and forth against the block. This also is a slow, tedious process, and from 20 to 30 hours may be taken to saw through a 5-ft. block.

As might be supposed, thousands of car loads of the sand are used annually in the mills; but, oddly enough, the quarries are provided with an extensive sand deposit not far from Proctor. True, a mountain lies in between; but the sand is successfully carried over its summit in a series of big iron buckets, hauled by an endless cable.

From the mills the slabs and blocks go to the polishers; and from that are passed on to expert workmen, who shape them roughly, according to the needs of the buyer. You will see expert operators carving solid stone into shape almost as easily as the artist moulds his clay. This "magic" is, of course, due to the pneumatic chisels used.

A veritable world of marble is here. It ranges from snow white to mottled green, grayish blue, and a hundred other shades. Towards the southern end of the county, the marble becomes very coarse; while, on the other hand, to the north it grows much finer in grain, until it reaches a state where it becomes very friable.

The supply is practically inexhaustible; and the next half century, far from seeing any diminution of the industry, will witness an immense increase in the amount of marble quarried; for not only is the demand increasing in leaps and bounds, but it seems that the larger and deeper the workings become, the more extensive appear the veins of every kind of marble which a luxurious age demands.

W. G. Fitz-Gerald.



THE FINISHED PRODUCT.

The Evolution of the Modern Warehouse

The warehouse of our boyhood days was a structure that impressed our young minds with its look of massiveness, sombreness and strength. It seemed to be indestructible; it was built for ages. In fact, its grim walls, its dusty windows, warped floors and mouldy beams seemed to have come down to us from times immemorial to go on lasting forever. We loved to climb over the mysterious boxes and barrels, getting ourselves covered with cobwebs and to lose ourselves in the dark, gloomy aisles. Our well-worn shoe soles would pick up splinters from the equally well-worn pine floors, and we would catch our clothes on rusty nails protruding from the oak posts. We would wonder at the great projecting wood blocks laid across the top of the oak posts relieving the massive beams and like good friends lightening their burden.



VIEW OF FOUNDATION, SHOWING THE GROUND FLOOR GIRDER FORMS AND STEEL REINFORCING RODS PROTRUDING FROM THE BOXES—TERMINAL WAREHOUSE.
Kansas City, Mo. Elzner & Anderson, Architects.

The great cracks in the wall or the undulating floors had no especial significance for us. We thought it great fun to pull the hemp elevator rope and would wonder at the ease with which one could make the heavy platform ascend with a still heavier load, and the others would lean over the rail and watch it come slowly up to where we were, and then we would let ourselves as slowly down again, although some of the boys would start for the ricketty old wood stairs, declaring that they could beat us down by that way, and they easily did. And when evening came, and with it quitting time, the porter would bank the fire in the rusty old stove, then close the clanging iron shutters here and there where they had been opened for the day, and finally would lock the massive wood door and walk away with a great heavy brass key with all sorts of mysterious teeth, and by the size of it we could not see how any one ever could break in through that door.

One day there was a fire and our dear old warehouse burned to the ground, as many of its kind have done before. And

there were many more that did the same harm all over the country. As we grew older this trouble seemed to be increasing and insurance companies were heavy losers. Something had to be done, but neither owners nor builders seemed to know what. Finally the insurance companies began investigations along carefully prepared and scientific lines, with the result that they evolved the slow burning type of building, or what became known as mill construction, because it was first applied to the textile mills of New England. This construction aimed chiefly to do away with the common flimsy joist and thin flooring and to substitute therefor heavy timbers and flooring of thick planks so as to have the wood used as much as possible in thick, solid masses that could not burn freely, so that in case of need there might be afforded time to fight a fire before it could gain much headway. There were other features, many in fact, and extending to the minutest detail. Concealed spaces between floors and in roofs were avoided; the heavy wood bolster caps on the posts were replaced by small iron ones called pintles, thereby avoiding a great deal of shrinkage; the ends of beams resting on walls were beveled off and anchored at the bottom instead of at the top, so that they might not pry the wall and over-turn it in case the floor construction gave away in a fire. Elevator shafts and stairways were enclosed by brick walls and the openings protected by fireproof doors made of wood covered with tin, and so on. An elaborate set of rules was established, all aiming to produce a building which might be saved, or at least not result in total destruction in a fire. To crown it all the insurance companies insisted upon equipping the interior of the building throughout with an elaborate system of water piping so arranged that the heat from a fire would automatically open a lot of outlets and spray the water in all directions, hoping thereby to extinguish the flames. This rapidly developed into the modern well-known automatic sprinkler system.

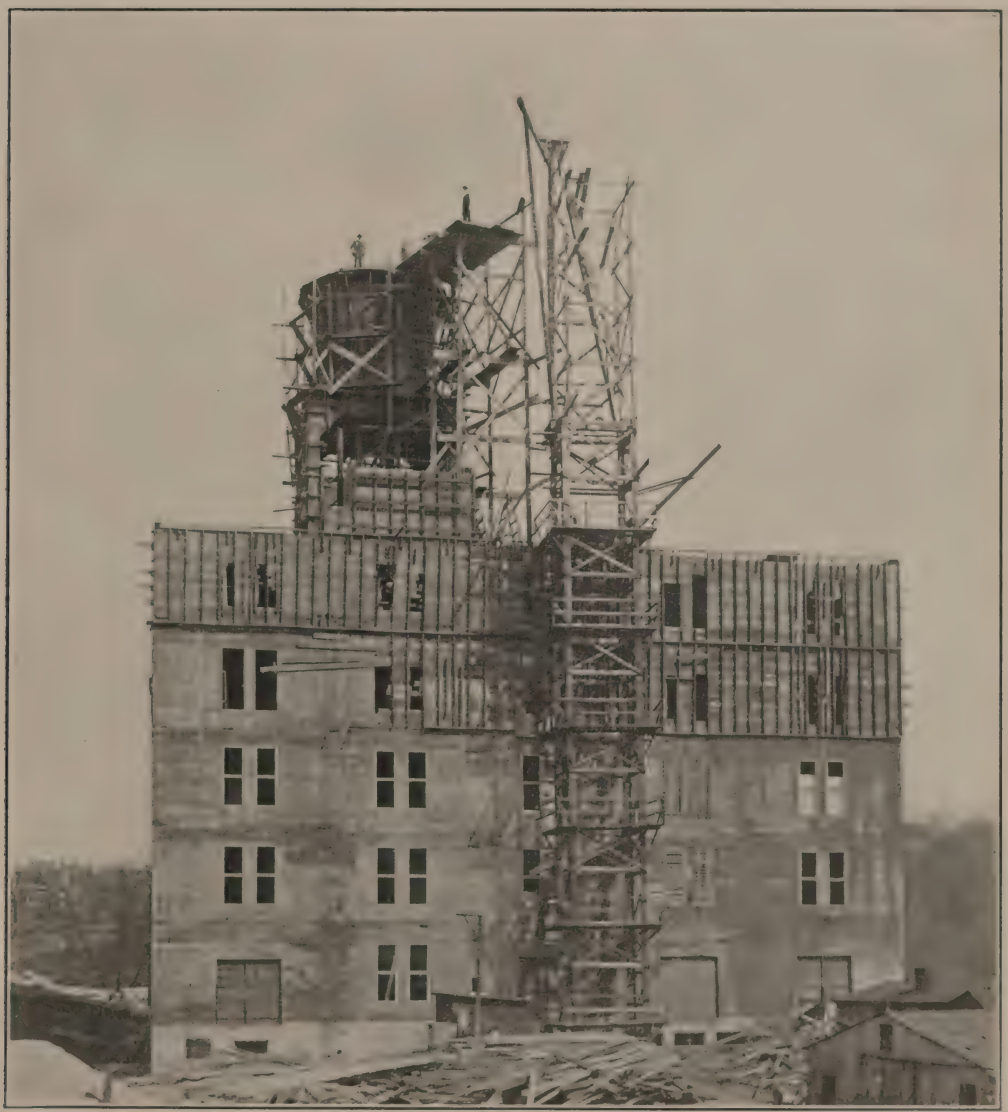
This type of building was readily acknowledged to be far superior to the old style of construction, and was promptly and almost universally adopted by all who could not afford to build a so-called fireproof building, constructed with a steel frame with hollow terra-cotta covering and floor construction. It required a great deal more capital to build in this fireproof manner, and as long as the insurance companies were offering low and tempting rates for mill construction, it was but natural that this method prevailed and gained rapidly in favor. Accordingly the country was built up everywhere with mill-constructed buildings in more or less strict accordance with the insurance rules and recommendations, and we all felt safe against the attack of the old common enemy, the fire fiend.

Again, we were growing older, and as time went on, fires began to break out in our mill buildings, and to our great surprise and consternation they went down before its fury, just as they did in the old times, only not so fast, on account probably of the local fire departments which to-day are truly marvels of efficiency. But in spite of this efficiency, many, many cases of total destruction were recorded, and the insurance companies again became worried. The surveys were more thoroughly made; surrounding risks were more carefully considered, rules and regulations of all kinds were revised again and again. All manner of fire-preventing devices were invented, tested, adopted, rejected, remodeled, improved, tested again, and so on, until the poor architect was fairly exhausting himself in a frantic endeavor to keep track of everything, to be up with the times and to produce the most approved type of building, one that a fire could not destroy.

It was indeed discouraging and well-nigh disheartening, for all efforts seemed to be of no avail. An ordinary fire might be controlled and often was, but if such a fire was not caught in its incipiency, or if the local fire department was not equal to the emergency, or if perhaps, the water supply ran out, the inevitable result was total destruction. Our mill buildings were in fact then simply licked

up by the flames; all our rules and regulations, our precautions and our watchfulness were of no avail. The results were everywhere the same.

But we have at last grown wiser and have found a way to check, if not to stop forever, the ravages of the fire-fiend among our warehouses, and for that matter we could and should apply the same principle to all other classes of buildings of any consequence. The principle is to rob him of his fuel and thus to starve him out. We have found a way to bring really fireproof buildings within the reach of all, and that too at such a small increase in cost over the popular mill construction that the increased investment is fully justified by the decreased fire risk.



VIEW OF REAR, SHOWING THE TANK—TERMINAL WAREHOUSE.
Kansas City, Mo. Elzner & Anderson, Architects.

The new method of construction is exemplified in the Terminal Warehouse Company's new building at Broadway

and Twenty-fourth Street, Kansas City, Mo. The building stands unique in that the use of wood in any form has been entirely avoided throughout the building. It has been absolutely eliminated, for it was felt that above all, a fire is best avoided by having nothing that will burn. The next principle to follow is to construct the building in such a manner that it will be absolutely fire-resisting. This terra-cotta or concrete, in the absence of which a fire would rapidly reduce its strength and cause collapse. Such damage has never resulted in buildings where reinforced concrete has been structurally used. The worst damage that results from very hot fire is a spalling off of some of the surface mortar, the injury never extending to the reinforcing steel. Even in such extreme cases the damage



FRONT VIEW—TERMINAL WAREHOUSE.
Kansas City, Mo. Elzner & Anderson, Architects.

cannot be accomplished by building the walls of brick, the material most commonly used for that purpose, for it is well known that while a brick wall will not burn, it cannot successfully stand up for any great length of time against a hot fire; it will collapse and naturally carry destruction with it in its fall. The only kind of construction that has been found not to give way in the hottest fire is reinforced concrete. Even structural steel must be heavily protected by brick, can be easily repaired by plastering the damaged places with a rich cement mortar.

In the Terminal Warehouse, therefore, reinforced concrete has been used wherever possible to do so, viz., foundations, columns, girders, beams, floors, roof, exterior walls, stairs, pent-houses and gravity tank on the roof for the automatic sprinkler system. In this way the entire building is practically a monolith, and has tremendous rigidity. The structure

is like a solid box; it may be overturned, but hardly collapse. It is of great importance, however, in designing and constructing such work that the proper amount of steel reinforcement be incorporated, and not only for adequate strength, but also to prevent shrinkage, for it is well known that concrete alone will shrink considerably and cause cracks, whereas the shrinkage stresses can be successfully taken by steel reinforcement in the shape of bars or heavy expanded metal, as was done in this case.

The exterior walls are six inches thick and finished on the outside with a rich cement mortar splashed on with a paddle so as to give a rough finish. This thoroughly preserves the character of the material and is highly effective. The front was given some architectural treatment by simple means. The moulding and panels are made with square sections and were produced by simply nail-



COLLAPSIBLE FIREPROOF DOORS, MADE OF CEMENT ON A STEEL FRAME—TERMINAL WAREHOUSE.

Kansas City, Mo. Elzner & Anderson, Architects.

ing boards and strips of proper shape on the inside of form work. The floors are solid concrete four inches thick, the top being smooth trowel-finish like granolithic sidewalk work. They are drained to outlets at various points and connected with the sewers, so that in case they are flooded the water will run off rapidly. The floor slabs are reinforced with heavy expanded metal. The beams and girders and columns are reinforced with twisted steel bars, and the beams and girders further reinforced with expanded metal at the ends to take up the shearing stresses. The entire construction was figured for an available live load of 300 lbs. per sq. ft. on the first floor and 250 lbs. on the second, third, fourth and fifth floors. The specifications required tests to be made under the condition that at an age of sixty days the floors must sustain two times the specified floor load and not deflect more than 1-800 of the span. In accordance with this provision, tests were made which were eminently successful.

The interior partitions are also fireproof, being made two inches thick and entirely solid, reinforced with small channel irons placed vertically 16 inches on centers and let into floors and ceilings. The doors are also fireproof, being constructed of steel channel frames filled in with cinder concrete from one and a half to two inches thick. These doors are used throughout, not only for ordinary purposes but for all the numerous storage bins with which the building is equipped. The windows throughout are made of heavy galvanized iron and double-glazed with quarter-inch wire glass, so as to make an absolute fire stop which is not always the case with single-glazed windows.

The entire building is equipped with an automatic sprinkler system which, while not a real necessity in this case, was nevertheless installed as an additional precaution against fire which might damage the contents, although even this would appear to be a remote possibility owing to its being confined in fireproof bins within a thorough fireproof building. The owners, nevertheless, wished to omit nothing that would add to the safety of the contents as well as the building. Even the electric wires are run in iron conduits built into the concrete, where there can be no short-circuiting.

As was stated in the beginning, every particle of wood was avoided in the construction of this building. This point was carried out consistently; even the elevators have steel girders and steel cars with steel plates for floors. In short, this building has been constructed without the use of a single inflammable substance, and is so thoroughly fireproof as no building was before, that it is firmly believed to be capable of successfully resisting any fire or conflagration no matter how fierce, something that cannot be fairly claimed for any type of building that has ever been constructed.

A. O. Elzner.

Some Interesting Studio Apartments

In the Atelier Building, 33 West 67th Street, New York



THE HALL IN MR. R. W. VONNOH'S APARTMENT.
PHILLIPS & JULLIEN, DESIGNERS AND DECORATORS.

IN Mr. R. W. Vonnoh's living apartment the wainscot and panel effects are obtained by applying wood mouldings to the walls. The general color throughout is a grayish ivory tone. In the dining room the panels over the wainscot and the ceiling are a Japanese dull gold paper, the walls making a good background for the colored plaques and Japanese prints. The brackets on wainscot give an apparent weight to support the walls above. The beams in this ceiling and, in fact, all the ceilings are structural, and are rather heavy for the scale of the rooms, no attempt having been made to accentuate them, wood mouldings giving simply a finish. In the library the bookcase and seat effect a pleasing line with the mantel and leaded windows. The walls are covered with a soft neutral green material on which are hung water colors and prints.



THE STUDIO OF MR. J. WILLIAM FOSDICK.

33 West 67th Street, New York. Phillips & Jullien, Designers and Decorators.

Mr. Fosdick is to be complimented on the successful results obtained in his studio, where the dignified architectural treatment and restful color scheme are apparent upon entering.

The ornamental panels taken from an old French Gothic chest are most successfully placed in the high chairs and mantel frieze. The woodwork is oak, treated in dark brownish tones, with the carved panels and ornaments brought out in gold and rich color. The walls are hung with old bluish green leather, forming an appropriate background for Mr. Fosdick's antique tapestries and paintings. The ceiling is dark blue in tone, and the structural beams are grained like wood, supported by old Gothic brackets in gold and color.



THE DINING ROOM OF MR. J. WILLIAM FOSDICK.
This room adjoins the studio and is most harmonious, the woodwork being a deep mahogany and walls a rich dull gold.
Phillips & Jullien, Designers and Decorators.



THE LIBRARY IN MR. A. MULLER URY'S APARTMENT.
33 West 67th Street, New York. Phillips & Jullien, Designers and Decorators.
The woodwork is oak, brownish green in tone. The walls are hung with a soft green hand-blocked paper. The wood cornice is to cover the irregularities of the structural beam work the over mantel being brought out to support it. The mantel facing of gray cement completes



THE LIBRARY IN MR. R. W. VONNOH'S APARTMENT.
Phillips & Jullien, Designers and Decorators.



THE DINING ROOM IN MR. R. W. VONNOH'S APARTMENT.
33 West 67th Street, New York. Phillips & Jullien, Designers and Decorators.

NOTES & COMMENTS

PROGRESS IN ARCHITECTURAL EDUCATION

About ten or a dozen years ago there took place in the different architectural schools throughout the land an awakening which even to-day is only in its elementary stage. The number of American students of architecture returning every year from the Ecole des Beaux Arts in Paris was beginning to assume large proportions. Before that time there had already been in existence for some years the American Society of Beaux Arts Architects who were paving the way in this country for the awakening that we speak of. They were a number of men, many of whom knew and had enjoyed our system of architectural education, and who had been fortunate enough to have enjoyed also the French training. These men arriving back in their own country, bringing with them a certain amount of the French spirit and enthusiasm, pledged themselves to spread and promote here the traditions of their adopted school; but alas, the surroundings were lacking, so that while their French brethren had about them many of the monuments, and especially the atmosphere that is so conducive to the proper frame of mind, the poor American students had to content themselves with photographs and reproductions, hoping at some future time to be able to see the real objects. This was indeed a great handicap and one which could not be overcome.

The French system of architectural education has, however, been adopted by our architectural schools with more or less modification, and it is our aim to set forth in the Architectural Record, in a series of illustrated articles just how their curricula have been affected by the French influence and how the methods of the foreign school have been adapted to our conditions. The text will be by the very best authorities, the men who are actually and actively engaged in the working out of the system, and the illustrations will be the direct results obtained by the students under this tuition. Professor Hamlin, executive head of the School of Architecture at Columbia University, will open the series in this issue. Articles by the heads of other schools will follow.

ARCHITECTURE'S OPPORTUNITY

The Springfield Republican, reprinting from this department a note on the plans for reclaiming the river front at Springfield, says very truthfully: "It is a matter that architects can appreciate, because they are painfully aware of the unsatisfactory conditions under which work is done in most American cities for lack of any intelligent plan or enlightened public interest; a building is a building, and has to take its chances. But the higher ideal of an ensemble—of a city finely planned, with central groups, spacious squares and beautiful water approaches—is at last taking a strong hold upon the American people—not as a vague dream, something to see abroad and celebrate by sending home a picture post-card, but as a practical ideal to be realized soon and without any extravagant cost at home. Travel has done much, and the multiplication of good pictures of beautiful buildings, streets and squares has had a prodigious educational effect. Ensemble, too, has been the great lesson which the world's fairs have taught. If the architects are as happy in their inspiration as in the opportunity opened by the construction of our two civic groups and the treatment of the waterfront, our city will some day be worth a long journey to see." This is lay appreciation of a great fact that should be inspiring to architects. The replanning of cities for aesthetic effectiveness holds out richer promise to architecture than to any other profession. It proffers a splendid opportunity; which, as ever, is accompanied by a responsibility that challenges the best effort and the highest talent.

REPORT OF THE NEW YORK ART COMMISSION

The report of the Municipal Art Commission of New York City shows that during 1906 it passed judgment upon plans calling for an expenditure of $27,000,000. The aggregate total is certainly so high as to make the existence of the commission worth while. For it is to be remembered that even where it simply approves the plans submitted and calls for no modification, the thought that

the commission will pass upon them, and the desire to avoid the public humiliation of the commission's disapproval, has no doubt a good effect on the designs. What the commission cordially approves might not in some cases have been so good if there had not been a possibility of disapproval. But more important than the aggregate of the cost of work submitted to the commission is the proportion that this bears to the full total of work contracted for. This proportion undoubtedly is rising. Significant also is the fact that the commission's adverse judgments are accepted with less opposition than formerly. Another feature of the report which invites consideration is that some forty works of art, consisting of fountains, statues, paintings, and memorials—nearly all of them gifts—were passed upon. The number is not large for so big and rich a city as New York; but it is fairly respectable and more than most New Yorkers themselves would probably have expected. In no city in the world do individuals give more than in New York for public purposes privately administered; but to give to the municipality itself has been considered another matter.

ECHOES OF THE LEAGUE DINNER

Touching on the city's attitude towards art, at the last annual dinner of the Architectural League of New York, Richard H. Hunt remarked that while three out of the ten members of the Municipal Art Commission were artists, only three out of the twenty-four members of the board of trustees of the Metropolitan Museum were of that profession. Under the circumstances he thought the city was setting an example to the Museum. Another well made point was that of Royal Cartissoz. This was a protest, unexpected in that gathering but much needed, and there, above all places, against the extravagant luxury of the age. A report of his speech quotes these earnest words: "No one plays more into the hands of this sentiment than do you. These French dwelling houses are one of the most appalling things architecture has ever known, each one with its marquise a mass of plate glass and iron, and all the frippery the fashion wants. Then in office buildings a bank does not look like a bank, nor a department store like itself. They are pseudo palaces. There is nothing like simplicity." Even in municipal construction, he added, things are done on too sumptuous a scale. There seems now to be a general forgetfulness that the beautiful is rarely the ornate, and that simplicity lends itself most readily to dignity. Where its influence reaches, the Arts and Crafts movement has done much for interiors; but there is yet grevious need for plain speaking and plain building.

ANOTHER BILLBOARD STORY

Some months ago the story was told in this department of a big Heinz sign, on the boulevard in Honolulu, that was removed by the advertisers themselves because the people protested. Fortunately, that sort of thing happens not once but every now and then. If it happened often enough, there would be fewer billboards put up. It lies with the people to make protests that are reasonable and strong when they feel outraged by a sign. A reader of the note about the Honolulu experience sends the story of a protest nearer home—at Walpole, Mass. It is interesting for its details of how the work was done. A clothier in a neighboring town ordered a signboard "to be placed as near as possible to the center of Walpole, on the main highway." The billboard man executed the commission to the letter, for after three days' effort he found "a place right in the centre of the town, within a stone's throw of the town hall." The correspondent says: "It was the first signboard that had been put up in Walpole. It was some forty feet long and fifteen or twenty feet high. We called it a monstrosity—nothing else." For a week or more there was lively criticism. Then an individual, a business man, wrote to the billboard man and to the advertiser. He told them that he was willing to use diplomacy first, but that there were numerous threats against the board, and something might happen. He had replies, but they were not very satisfactory. The advertiser, it seemed, had gone South and his subordinates hesitated to act for him. Then the business man took the matter up with the Walpole Club. "I am very glad that I did," he says, "for I think it is always better to work through an organization." The club got up a stereopticon lecture on the billboard evil and sent to all the seven or eight hundred landowners in the town a letter that would tend to prevent any more billboards. At last the advertiser himself was heard from—and at this point it is fair to give his name: F. J. Kennedy, of Hyde Park. He wrote that he would have the board removed, at his own expense, saying: "We

have no wish to maintain a board that is distasteful to your community. Furthermore, we wish to thank you for your forebearance in the matter." He was as good as his word, and he acted at once—without waiting until the ground softened, when the work might be done more cheaply. In removing the board he won back the friends he had lost by its erection, and incidentally learned that it would have been better not to have put it up.

SKY-SCRAPERS IN A HALF-LIGHT

The beauty of the skyscraper is the subject of a suggestive article by Giles Edgerton in a recent number of "The Craftsman"; and lovely reproductions of eight of Mr. Pennell's etchings emphasize the text. "Half way across the bay," the article begins, "the mist thinned out a little, changing from deep gray to pale rose and pearl. The water grew luminous as the edge of the mist trailed through it, and a city of enchantment rose through the scattered vapors —a city of uneven lines, of eerie towers that gleamed high with many orange lights and of low dwellings that rested in shade at the foot of high walls. As the mists gathered and fell apart from time to time, the city took on fresh wonder. It seemed piled up into the heavens." Ruskin, the author reminds us, declined to visit America because he could not live where there were no castles. "If to-day he could sail across South Ferry at dawn or twilight, or walk up Broadway through a mist, or cross Forty-second Street near the Times Building in a snowstorm, he would forget that we have no castles." But the pity of it is that even Mr. Edgerton would wish the atmosphere on these occasions to be of a semi-veiling character. If in the strong light of New York's brilliant sunshine Mr. Ruskin, with his love of sincerity to every uttermost detail, should see our skyscrapers, his comments would be more forcible than flattering. And yet the structure in its mass is genuine. The author claims it as "the first absolutely genuine expression of an original American architecture." It has dared to exist; and though it has rarely ventured to throw off the ill-suited garment of convention, which deceives nobody, it may do so now that there is admission of its impressiveness and beauty in a half light that shows its bulk and hides detail. And it is the half light alone that concerns Pennell and Edgerton. In that New York "redeems herself from ugliness."

CHINATOWN ARCHITECTURE

Mention has been made here of the plans, prepared by request of the Merchants' Association of San Francisco, for a distinctly Oriental type of structure that would be available for the rebuilding of Chinatown. The San Francisco Real Estate Board has followed this lead by adopting resolutions approving the idea and asking property owners within the Chinatown district to rebuild "with fronts of Oriental and artistic appearance." The board makes no disguise of its main thought: that such architecture will be picturesque in appearance and hence attractive to tourists and visitors. There is clearly lacking that ethical motive which might inspire an architecture of conspicuous merit; but at least there may be a more harmonious result than a row of huge rectangular pigeon-holed soap-boxes to house swarms of Orientals and to stand as the material sign of their presence. One building, curiously combining Western plate glass and straight lines with Eastern curves and twists, is already under construction on a conspicuous corner. It is the intention to illuminate the cornices, hips and other salient features with colored lights, and two great lanterns hang from the corner tower. The lower floors are rented for a store, and the general effect is rather surprisingly satisfactory.

A CHURCH PLANS JURY

The Protestant Episcopal diocese of Newark, N. J., has before it a proposition to establish a commission on Church Architecture. The canon, offered by the Rev. Walter Gwynne, of Summit, N. J., requires that the commission "shall consist of the bishop, together with two clergymen and two laymen, to be elected annually by ballot." It declares it the "duty of every parish, by its rector, wardens and vestrymen, to lay before this commission the plans and specifications of any new church or chapel, for their counsel and advice; which counsel and advice shall be given in writing within one calendar month after the receipt of the said plans and specifications." The proposition is new to the church in America, and as a long step in the right direction it has much to commend it. Action was deferred, at Mr. Gwynne's suggestion, until the May meeting, the resolution resting meanwhile in a committee of which Mr. Gwynne is chairman. His associates are two clergymen and three laymen;



CHATEAU DES BEAUX ARTS.

Huntington, L. I. Delano & Aldrich, Maurice Prévot, } Architects.

and Mr. Gwynne, remarking that the canon "is in complete harmony with the different organizations in our cities for the improvement of civic art," expresses the belief that it will be adopted. It ought to do much to protect the small and poor parish on the one hand, and the rich and uncultured on the other—if they follow the recommendations of the commission.

AMERICAN ART IN IRON AND BRONZE

The issue of American Art in Iron and Bronze for January, 1907, published by John Williams, Inc., is worth special attention, because of the large number of illustrations which it contains of some of the most beautiful bronze doors executed by American sculptors. Among the doors illustrated in this publication are those of the chapel of the General Theological Seminary, designed by J. Massey Rhind; those of the Baltimore Court House, designed by Wyatt & Nölting; those of the Memorial Chapel at Stanford University, designed by Clinton Day; those of Nelson Robinson Jr. Hall, designed by McKim, Mead & White; those of the Congressional Library at Washington, designed by Olin Warner and Herbert Adams; those of St. Bartholomew's Church in New York, designed by Andrew O'Connor and Herbert Adams; those of the Carnegie Library in Pittsburg, designed by Alden & Harlow; those of the residence of Mr. George D. Pratt in Brooklyn, designed by Babb, Cook & Willard, and those of the Boston Public Library, designed by Mr. Daniel C. French. The comment of Mr. Russell Sturgis on Mr. French's doors, which is copied from Scribner's Magazine, brings out the peculiar originality of Mr. French's design. Other doors, of which illustrations may be found in the same issue, are that of the National Park Bank, designed by Donn Barber; those of the Knickerbocker Trust Co., designed by McKim, Mead & White, and those of the Industrial National Bank in Pittsburg. It would be difficult to find in any other American periodical such a complete collection of such interesting work of this kind.

CHATEAU DES BEAUX ARTS

We illustrate herewith a perspective drawing of the Château des Beaux Arts of which a plan and an elevation were given in the February issue. The establishment holds interest on account of its novelty, being in fact an entirely new departure in the manner of hotel planning. The buildings are to be rigidly constructed and kept open, we understand, the year round, to be a seaside resort in the summer and an objective point for tourists during the seasons when other summer hotels close to New York are usually closed. The need of such a place of refuge and refreshment as well as of pleas-

ure, has long been felt, and its success as a business venture seems reasonably assured, as the location is good and much frequented at all seasons by automobilists and other pleasure seekers. If the idea takes, as it fully deserves, we can expect to see many similar undertakings under way in the near future. Many of the present summer hotels will be forced to meet a new kind of competition which will be worthy of their best endeavor, and force them to give their patrons better accommodations for their money. It will at the same time offer them new opportunities for profit, and perhaps on a more wholesome basis, insuring a good, even business the year round, for which preparation could safely be made, rather than a "rush season" of four or five months with heavy risks and uncertain returns. This condition of the seaside and suburban hotel business is, beyond question, largely responsible for the unsatisfactory buildings and erratic service of many of them.

We append a short descriptive explanation of the Château des Beaux Arts, by the architects:

"This establishment is now being erected at Huntington, L. I., from designs by Delano & Aldrich & Maurice Prévot, architects, for the owners, Messrs. Bustanoby Bros., of the Café des Beaux Arts, New York City.

It will be partially opened to the public this spring and the rest completed at an early date. A hotel will be combined with a restaurant, bathing pavilions, garage, etc., the whole treated somewhat in the manner of certain French establishments, such as the Pre-Catalan in the Bois de Boulogne, with all possible resources of landscape gardening and decorative architecture. Along the edge of the bluff, overlooking the beach, stands the restaurant building, two stories in height, with a café below and large and small dining-rooms above. Between it and the hotel proper is a terrace treated with small pavilions, under which meals will be served by means of a tunnel running from the kitchens. A number of villas will also be erected on the property, to be conducted in connection with the main hotel and restaurant. The whole is being constructed of reinforced concrete."

THE IMPLIED CONTRACT—CEREMICS MERITORIOUS AND MERETRICIOUS.

In the matter of building materials there are many hopes and expectations unrealized. In all of them, undoubtedly, there are certain expectations, the realization of which is beyond peradventure. But in the shifting demands that are made of such materials, it is sometimes difficult to keep the eye fixedly concentrated on the demands that may be regarded as fundamental, so fundamental that their regulation is never particularly specified.

The shifting is bound up with the point of view of artistic expectation. At one period there is a rage for frank expression as it is called. Every material that is used must show what it is, and in order to show this plainly, it must emphasize its limitations or its faults. At another time, other ideals prevail, and materials must be refined and finished, reassorted and reselected, saturated with fillers and covered up with surfacing materials whatever their character, or twisted and tortured in their treatment until they resemble something quite different, but fit in with the particular style that is uppermost in the public mind and answers its ideals of good taste.

In the heat of argument, during the discussion of these movements, and in the attempt to justify them in practice, the artistic aspect of materials becomes so paramount that the technical fundamentals which are taken as a matter of course, are quite overlooked, and never thought of until the use of the building brings them in a very short time into prominence.

It will be no harm in this connection to discuss what has happened with some of the clay products. The manufacture of terra cotta for the exterior of buildings grew to the fulfilment of a practical need. The steel structure of tall buildings arose and with it the demand for a light wall to fill in the separate stories, and shut in the enclosure from the outer air. The wall of the steel structure became in the eyes of the builder no longer a wall built as a structural mass, but a curtain which in accordance with the needs of construction could be hung in the ninth story or in the first, quite irrespective of the feeling that every wall must be built from the ground up.

The hollow and the comparatively light terra cotta brought in addition to its advantage from this point of view, facility of multiplication in plaster molds and therefore cheapness. It was also unfortunate enough to be made from clay, and therefore in an infinity of tints. These delusive advantages also brought with them rigid conditions, and how these were ignored every architect knows.

Because clay shrinks in the fire, and shrinks irregularly and differently, terra cotta is not cut stone, and those who would use it as cut stone bring their punishment down on their own heads, from which mere abuse of the material can hardly be said to

purge them. Because burned clays can be made in hundreds of shapes and tints, it does not follow that it is within manufacturing possibilities to make it of any shade that will suit the whim of the arbiter. So the paint-pot and the turpentine barrel became indispensible materials in the terra cotta shop, where their presence should never be suspected.

A clay product is one that is tried by fire, and the implied contract in its use is that it can be tried in the fire again. Is that contract broken when it is put up in a building nicely painted with an oil paint and heavily loaded with turpentine to give it the soft dull tint of the native clays?

For years the difficulties attending the making of floor tiling from clays fixed the attention of the architect constantly on the question whether the slightest technical requirement could possibly have remained unfulfilled. The tile were scrutinized not only with the straight edge but they were laid in the floor under skirting lights to make sure that in this piece or that the slightest variation from the true level did not exist. As it was known that no two pieces from the tiler's press had absolutely the same shrinkage from fire, and as small variations in the size can only be equalized in the cement joint between the tile, the product was measured and criticised and the joints made the object of discussion until the standard requirement was that the individual pieces should not vary from each other 1-32 of an inch in size.

Again the variation of shade in the fire became the object of anxious solicitude. Over all these requirements, the fundamental one which was not forgotten by the tile-maker, namely, that the clay baked must be absolutely matured and not be capable of scratching with a steel point was so completely forgotten (because so constantly met) that it disappeared from the minds of tile users as something to be thought of.

And now there comes a gentlemanly amateur from Pennsylvania whose cultivated eyes detect that the hypercritical anxiety of the architect has robbed the tile wall and floor of its individuality by reducing the joint to a hair, and the color of the surface to the monotony of paint. Playing with that fascinating toy the fire, in its effect upon that fascinating material which can be given any form by the hands, he sees that the most interesting flashings and tintings can be produced by the most fusible clays at very low heats. He takes these to the architect, who is unwilling to consider anything thus far in the tile-maker's art, but the complete fulfilment of the rigid fetters into which his demands had forced it. He is fascinated by the sports of the flame displayed by his amateur friend, and over his admiration he forgets the fundamental requirements of the baked clay tile, that it must be matured in the fire. He has always forgotten this, and he forgets to take out his jack-knife and try it upon the new sport that is recommended to his use.

It is needless to say that a year or two of wear of these meretricious productions in the floor display that they are not what they pretend to be. No one suffers but the client, and he has paid his bills some time ago. Meanwhile it is an ill wind that blows nobody good. If the architect will allow a small proportion of the fascinating qualities which are natural to that flamed-burned product the "tile," he need not sacrifice the meritoriousness of its durability, if he will but accept the meets and bounds of each of the qualities in a rational degree.

The Art of Piano Making

We are now in a century which we like to call America's age, the age in which we have made ourselves a great nation, and as we proudly think, solved many problems that the Old World passed on to us.

As we survey our triumphs of government, art, science and industrial invention, among them is certainly our own art of piano making, in which we have outstripped all other nations and formed a school for the world.

No product of human ingenuity has been the outcome of a steady and systematic growth from age to age by more demonstrable stages than our present day piano. It is the most remarkable of all musical instruments in that it can take the place of an entire orchestra in manifold effects of tone and has reached the highest form of perfection both in art and science through the patient labor and life devotion of Theodore Steinway.

It is not our object to treat of the interior mechanism of the piano with its marvelous tonal qualities, but of its closely allied relationship to architecture, neither of which seek to imitate nature nor to express the effects and inward feelings, but rather to embody the feelnigs themselves.

Toward the end of the nineteenth



No. 1.—Gives the exquisite simple beauty of the harpsicord shape of the early Colonial period. The sides and open lid are painted in allegorical subjects after Boucher.

No. 2.—Is of rich mahogany with Bombay and Intaglio surface, fitted with ormolu mounts of Louis XV. period. The whole work is gilt, and the painting under the lid is after a Watteau design. The music is lighted by electroliers.

century we began as a nation to wake up to the fact that our furniture was inartistic, and an immense all around improvement was the result. Many of our best architects and artists interested themselves in the movement, but failed to include in this decree (that all things shall be beautiful and of due proportion) the piano cases which were equally barbarous in their want of artistic refinement.

This was not so in England, however, for at this time we hear of the important work done by such men as Robert Adam and Chippendale, who paid considerable attention to the organ both for houses (chamber organs, they call them) and for churches. From Adam we have no less than six designs. In speaking of them, he very truly says, it is a pity that the organs are not better adapted and do not form part of the furniture in all of the well appointed houses of our time. Perhaps the best work was done by Sir



No. 3.—Is an exquisitely graceful piano of dark mahogany mounted in carved gilt with vertical veneer of a lighter shade surrounding the rim. The whole speaks most eloquently of the artistic control of the handicraftsman and the artist working together.

No. 4.—Is a parlor grand of solid mahogany, mat finish, carved in relief, the legs being connected by a stretcher.

Edward Burne Jones, in which the old harpsichord shape was employed to advantage. There can be no doubt that the painted decoration done from these artists' own designs was both fitting and advantageous.

The improvement in furniture has not been followed up by a proportionate advance in pianos as a whole, and much more remains to be done. And who is better equipped to take up and repeat this art revival than our own architects? Who are showing us so plainly that ugliness has had its day, and who knows better than they that the truths of art cannot be bought, but are revealed only? These truths have been revealed to them because they have made themselves receptive of all beautiful things. And it is here that the refinement and culture of the architect can do so much towards influencing his client to a feeling of appreciation in noble design.

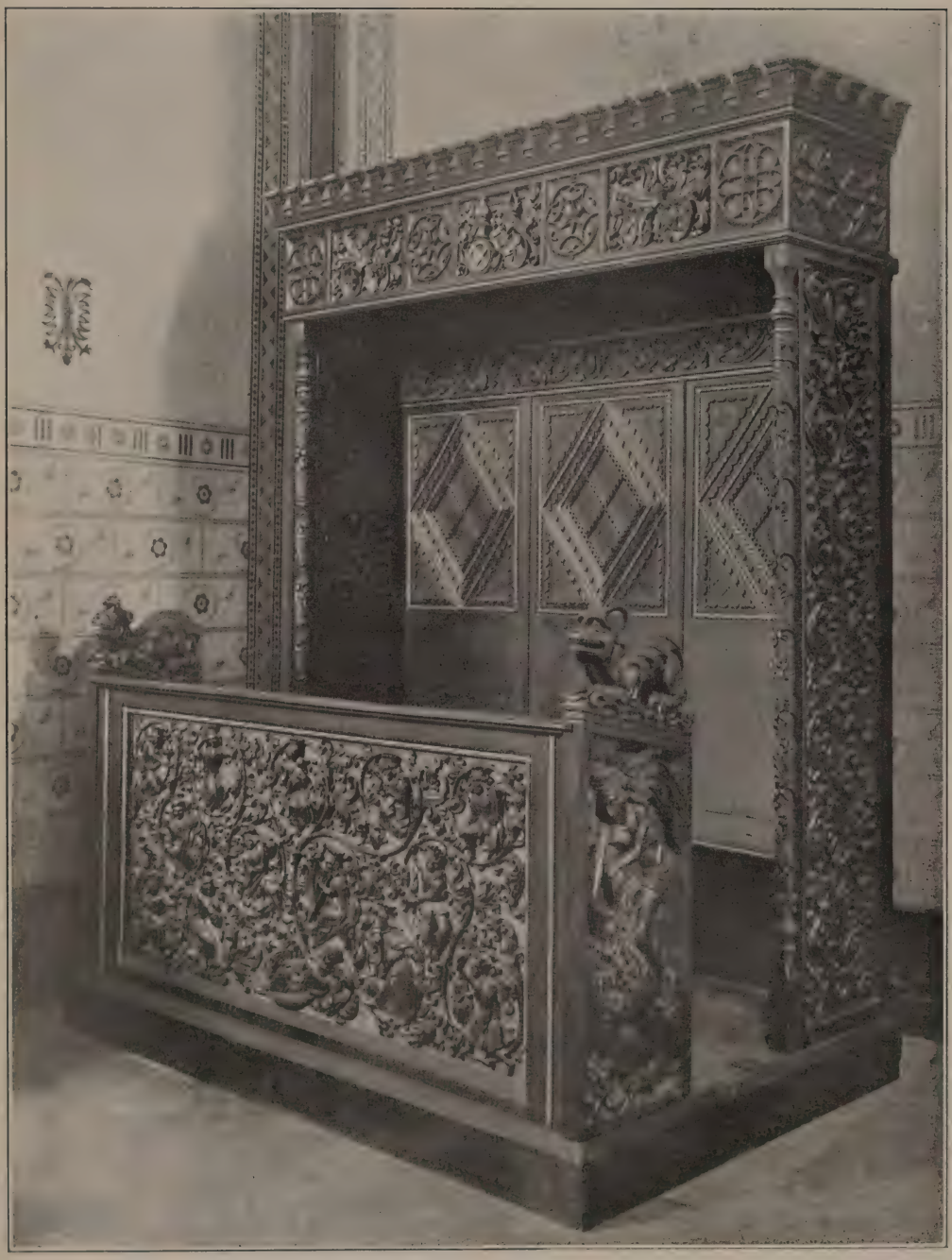
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Nos. 5 and 6.—Different treatments of the Louis XVI. period.

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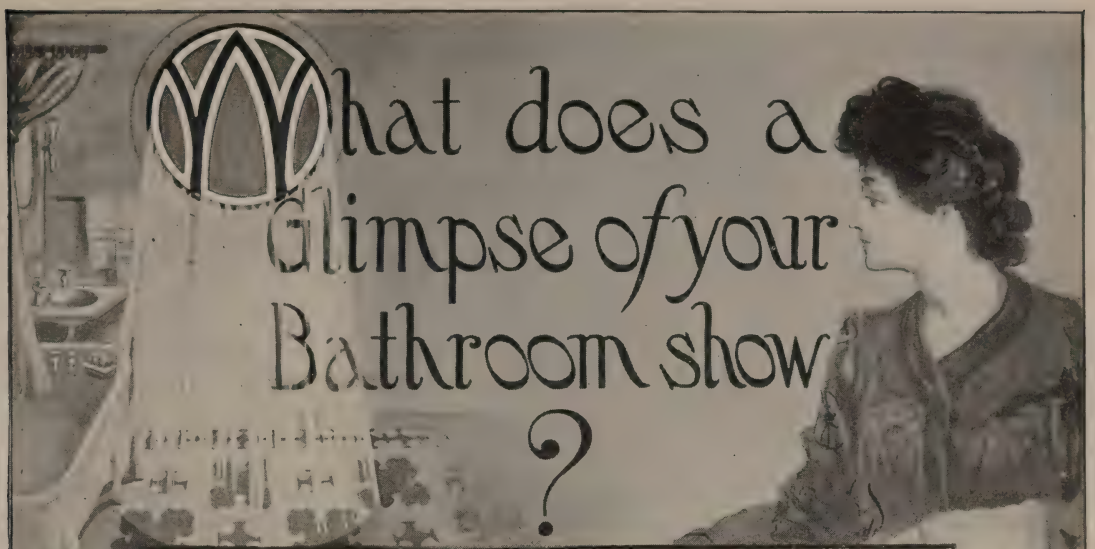
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A LIGHT FROM THE GREAT CHANCEL WINDOW, TRINITY CATHEDRAL, CLEVELAND — TOD MEMORIAL — HARDMAN GLASS

The
Architectural Record

Vol. XXI JUNE, 1907. No. 6

The Discovery, by Professor Gustavo Giovannoni, of Curves in Plan, Concave to the Exterior, in the Façade of the Temple at Cori

Read Before the Archaeological Institute of America at Washington, January 2, 1907

The object of this paper is to call attention to the recent remarkable observations of curvilinear refinements in the Temple at Cori.

Prof. Gustavo Giovannoni, who has made these observations, is Assistant Professor in the Royal School of Engineering Architects at Rome, and at present holds the office of Vice-President in the Roman Society of Architects.[1] Aside from other publications, he is the author of an important monograph on the building popularly known as the Temple of Minerva Medica at Rome, designated by Professor Giovannoni as the "Sala Termale della Villa Liciniana."[2]

The attainments as an architectural surveyor and as an engineering expert and expert in construction which are implied in Professor Giovannoni's position as instructor in the Royal School of Engineers at Rome are additionally guaranteed by the technical precision of his monograph on the "Sala Termale della Villa Liciniana." The revolutionary importance of the observation to be described makes it more than usually necessary to mention, as above, the attainments, standing and expert character which are thus guaranteed in the observer. For in giving credence to the observation at Cori we are entering on unexplored territory; we are necessarily abandoning frequently quoted and widely credited explanations of the ancient curvilinear refinements in favor of other explanations which have been widely ignored. More than that, we are facing phenomena which must appear almost incredible to the every-day current knowledge of ancient art.

Hence an unusually circumspect and careful consideration of all the facts is to be desired. To this end, we shall first briefly describe the observation of Professor Giovannoni.

Second, we shall explain in what sense it is novel and remarkable.

Third, we shall rehearse the previously more or less well-known facts about the ancient curves and consider what special theories relating to them must be abandoned, at least as general and comprehensive explanations, in face of the newly discovered curves at Cori.

The announcement regarding these curves was originally made by Professor Giovannoni before a meeting of the Roman Society of Architects, which was held on the 6th of February, 1905. It was first published in the *Annuario* of the Society for that year. The additional facts to be related were then obtained

[1] Associazione Artistica fra i Cultori di Architettura, Roma.
[2] Annali della Società degli Ingegnere e degli Architetti Italiani. Fasciolo N. 3, 1904.

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through personal correspondence with Professor Giovannoni, who has also allowed me to describe and publish them.

I am advised by his letter of December 8, 1906, that the isolation of the Temple at Cori from adjacent buildings will be shortly undertaken by the Italian Government, and that this opportunity will be used for the construction of scaffolds which will enable him to take measurements in detail of the upper portions of the façade. Meantime, I quote from an earlier letter, of July 2, 1906, the following information:

"The Temple of Hercules at Cori belongs to the late epoch of the Roman Republic, and is one of the finest specimens of this period of transition from the Greco-Etruscan style to the Roman. The pronaos and the great door are still in almost perfect preservation and show splendid execution, both from the artistic and from the constructive point of view. The suspicion of accident (in regard to the curves) cannot be entertained.

"No one, however, as far as I am aware, has previously observed or measured the curve of the façade. This curve exists, notwithstanding, and is very clearly defined. The concavity (in plan), which is small at the columnar bases, where it measures 10 or 12 cm. deflection, increases to nearly 35 cm. in a length of m. 7.50 at the cornice. The gable follows the same line, and the regularity of the joints gives assurance that neither (original) accident nor subsequent movements have produced this remarkable deflection. There are no curves on the flanks."

As regards the measurements just quoted, it is to be observed that the curve of 10-12 cm. quoted for the bases, is one of unusually large deflection for the given length of m. 7.50, as compared with other classic curves; and that the curve at the cornice of 14 inches, or 35 cm., is far greater than any curve previously recorded for the ancient monuments, both as regards the actual measurement and still more as regards the relation of other smaller deflections to the greater widths or greater lengths of buildings.

Aside from the remarkable amount of the curve, its still more remarkable feature is the concavity in plan, and I need hardly remark that this feature constitutes its most astounding and novel characteristic. It is further to be noticed that no other Roman temple has been so far announced as showing any curves whatever, with the exception of the Maison Carrée, at Nîmes, which has curves in the cornices of the flanks which are convex to the exterior.[3] See Fig. 2.

As the adjacent buildings interfere at Cori with a photograph sighting on the curve, the reader is advised to inspect Fig. 10 for an illustration of its nature.

Aside from the assurances given by Professor Giovannoni as to constructive intention, there are two evidences of such intention which speak for themselves, even to those who have not examined the temple, viz.: that the curve is found in the bases of the columns, and that a concave curved deflection in plan of the cornice and gable, to the extent of 14 inches, could not have been the result of accidental movements without the appearance of very visible and palpable dislocations in the connected structure, which must also have visibly affected the supporting columns, either at the angles or near the center, one or both.

As regards the theories which have been advanced to explain the ancient curves, the discovery of curves at Cori, concave in plan to the exterior, has a revolutionary and far-reaching significance. The optical effect above the level of the eye of a curve concave in plan is that of a curve in elevation—that is, of a curve in a vertical plane—which descends towards the center. Consequently, the explanation which has been so widely quoted and credited that the ancient curves were intended to correct optical effects of sagging downward is immediately and decisively thrown out of court in the case of the temple at Cori, for it is exactly an effect of sagging downward

[3]The constructive existence of these curves has been verified by the official architect of the City of Nîmes and also by his predecessor in the same position. See Smithsonian Reports for 1894 (published in '96). "A discovery of horizontal curves in plan in the Maison Carrée at Nîmes." Under the same title see also the American Journal of Archaeology, Vol. X., No. 1 (1895); and the Architectural Record, Vol. IV., No. 4 (1895).



FIG. 1. THE TEMPLE OF HERCULES AT CORI.
As the adjacent buildings interfere with a view of the curve, its character is illustrated by Fig. 10.

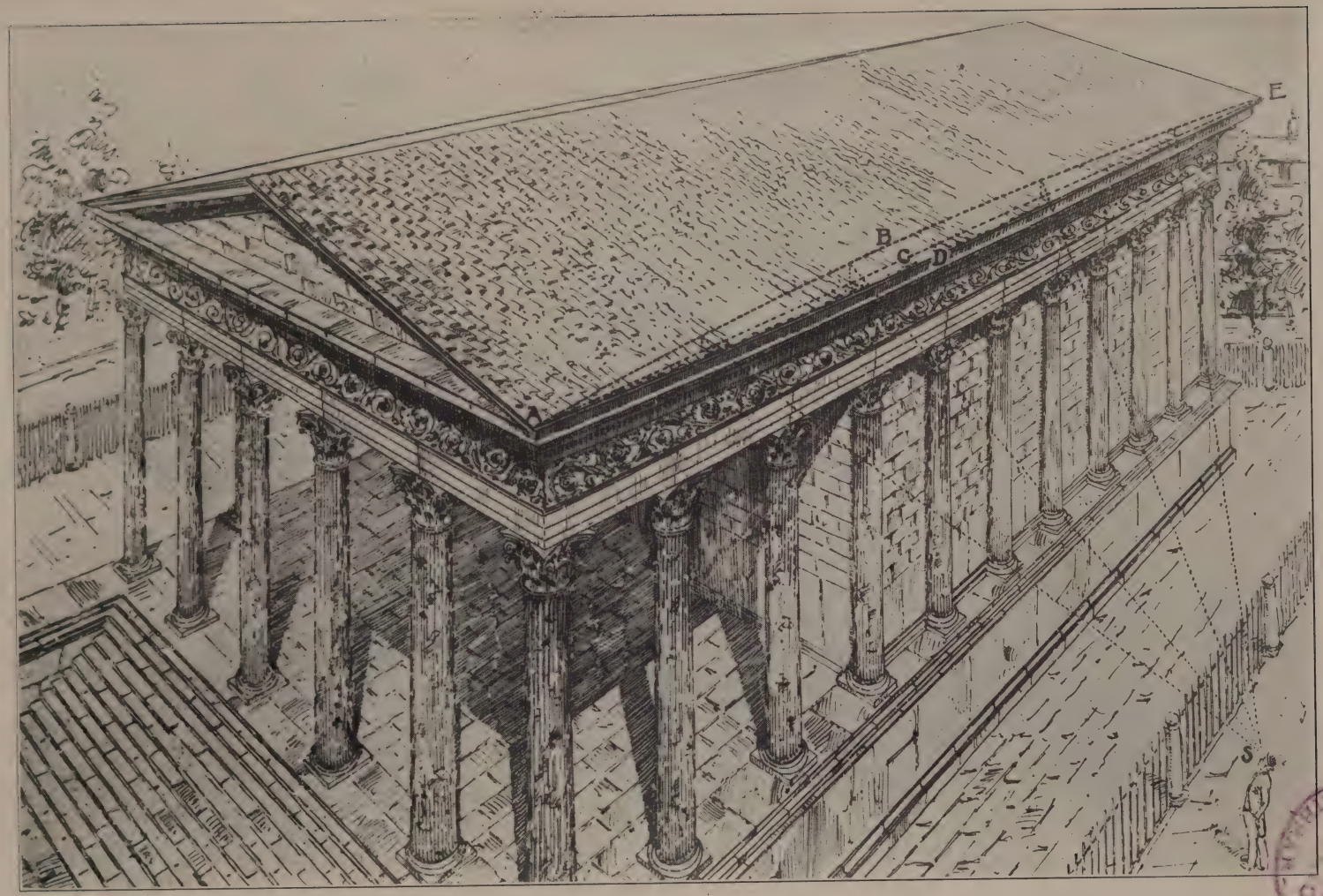


FIG. 2. BIRD'S-EYE VIEW OF THE MAISON CARREE AT NIMES.

The upper dotted line suggests the optical effect of the curves in plan, convex to exterior, which are found on the flanks of this temple (deflection about five inches). From a drawing by John W. McKecknie.



FIG. 3. THE TEMPLE OF JUNO LACINIA (SO-CALLED) AT GIRGENTI.
From a photograph of the Brooklyn Museum Survey of 1895. Straight lines have been drawn on the negative to exhibit the rising curves in elevation of the stylobate and entablature.

which is actually produced by this curve, as far as the upper horizontal lines are concerned.

So conclusive an argument leads us to examine the previous standing of the widely spread impression that the Greek curvilinear refinements were intended universally to correct optical effects of sagging, and thus cause the lines to appear straight. This explanation is frequently quoted for the rising curves in elevation, such as are found in the Parthenon and some other Greek temples; and these are the curves which have so far absorbed the attention of the majority of experts (Figs. 3, 4, 7). It is true that different curves may have been employed in different buildings for different reasons. It would be establishing a very important fact, if this fact alone were established by the instance at Cori, but the opportunity is a convenient one to point out that the widely quoted explanation is essentially a popular misapprehension of an entirely different proposition, and that this widely quoted explanation has never been mentioned by any of the optical experts who have written special publications on the Greek curves.

It is a popular modern prejudice that architectural lines ought to *be* straight. It is consequently a proposition which instantly appeals to the popular mind that the Greeks curved their architectural lines in order that they might *appear* straight. Hence, probably, the widely quoted but really mistaken proposition that all horizontal architectural lines tend to sag, optically, at the center. This impression among architects may be due to the occasional practice of cambering interior flat ceilings, or tie-beams under a gabled roof, but the problem of optical effects in such interiors has no relation to the general but mistaken proposition.

It is an elementary proposition in perspective that horizontal lines above the level of the eye curve downward toward the extremities on near approach. This elementary proposition is most easily realized by assuming the position of the spectator to be opposite the center of a building of such dimensions that the head has to be turned first in one direction and then in the other in order to take in the entire upper line. As the really horizontal upper line to the left of the spectator will descend optically in perspective towards the left, and as the really horizontal upper line to the right of the spectator will descend optically towards the right, it is manifest that the eye, in passing from left to right, or from right to left, must see the whole horizontal line optically as a curve descending towards the extremities and highest in the middle. It is equally true that all lines which descend in perspective in a single direction must descend in a curve, optically speaking, because the line which is really straight and horizontal descends in gradually increasing amount, according to the distance from the eye. Consequently an actually horizontal straight line which, optically speaking, changes direction from point to point must necessarily change direction, optically speaking, in a curve. It is only the mental knowledge that the line is really straight and horizontal which interferes with the perception that the line is really seen as a curve.

The interference of a mental conviction based on general positive knowledge, with an actual optical appearance, is a well established fact. This interference of the brain with the true facts of vision has been ably described by Professor Guido Hauck in a publication to be presently quoted. Professor Hauck found that the ability to see the rising curves which optically exist in all horizontal lines above the level of the eye (unless interfered with by other lines) was strongest in women and in the persons whom he calls "Naturmenschen," among whom he includes artists; whereas persons with mathematical and scientific training were frequently unable to see the curves at all. He also found in his own experience a progressive improvement in his ability to distinguish the curves as actually seen by the eye. He also found that optical curves in lines really straight and horizontal could be seen in a line of separated lights illuminating an architectural line at night, when they could not be seen in the same architectural line by daylight. The mental conviction had an effect on the con-



FIG. 4. THE TEMPLE AT EGESTA.
Showing the rising curve in elevation of the stylobate. Photograph of the Brooklyn Museum Survey of 1895.

tinuous line which did not occur with separated points of artificial light not visibly connected by the architectural line.[4]

All these facts assist us to understand why lines which are optically seen as curves are not generally recognized as curves by the every-day human being. They also enable us to understand that

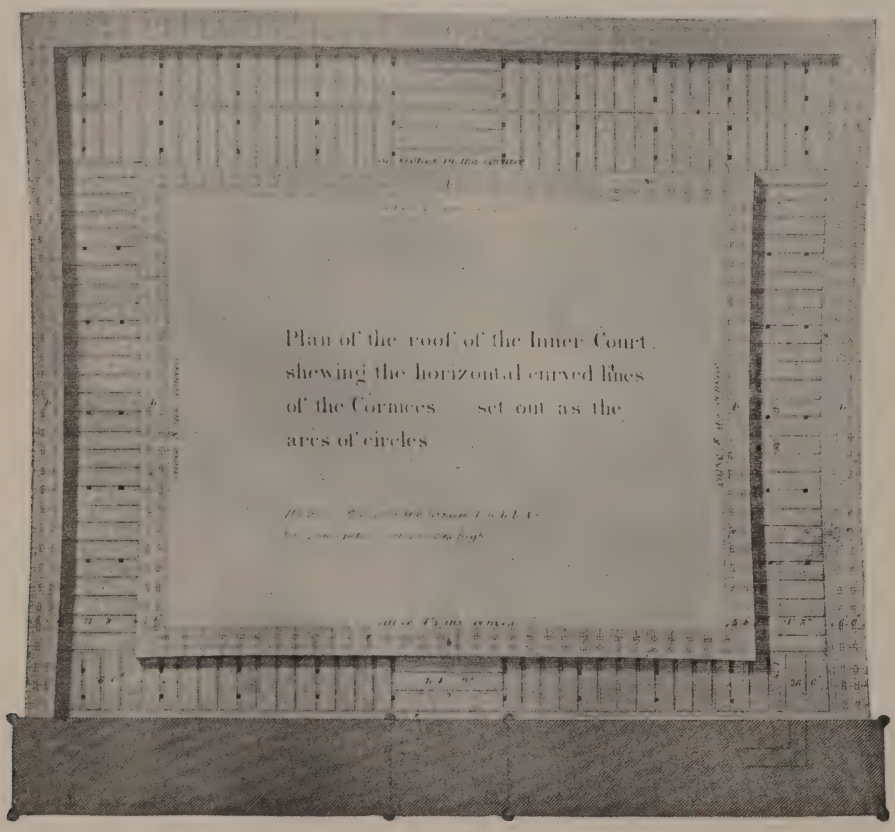


FIG. 5. PLAN OF THE ROOF OF THE INNER TEMPLE COURT AT MEDINET HABOU, THEBES.
From Pennethorne, "Geometry and Optics of Ancient Architecture.

the perception of the curves which are optically present in the facts of vision varies according to temperament and according to training. As a matter of fact, there is no perspective which is not curvilinear, but as these perspective curves are too delicate to be generally represented in the dimensions of pictures, instruction in perspective, as regards draughtsmen and painters, generally ignores them, and hence does not tend to counteract the average human indifference to their existence, which is due to mental correction.

All these points bear on the popular

[4]The mental corrections of optical appearances which are described by Professor Hauck have a curious analogy in the experience of Mr. John W. Beatty, M. A., Director of Fine Arts in the Carnegie Institute at Pittsburgh, Pennsylvania. The following extract from his letter to me on this subject is published by his permision:

"Briefly put, my experience was this: When I first put on glasses for astigmatism, perpendicular lines appeared not parallel, being wide at top; in the size of a newspaper page, about one and one-half inches wider than normal. When I had worn the glasses for several months, lines seemed again parallel. Now, when I take the glasses off, lines are again not parallel, but *wider at the bottom.*

"Dr. Lippincott's theory was that I had always made mental correction, and lines recorded on the retina out of parallel were made to appear parallel by virtue of mental correction. This seems to be absolutely proven by the history of the case, as above briefly outlined.

"When I take the glasses off now, I see lines imperfectly at the instant of time, because the brain is not given time to correct the defect.

"The fact that the greater width is now at the bottom, without glasses, whereas it was at the top with glasses when they were first used, is significant. You will find the reference to my case in the Archives of Opthalmology (Vol. XVIII.) p. 18 and more particularly, p. 28."

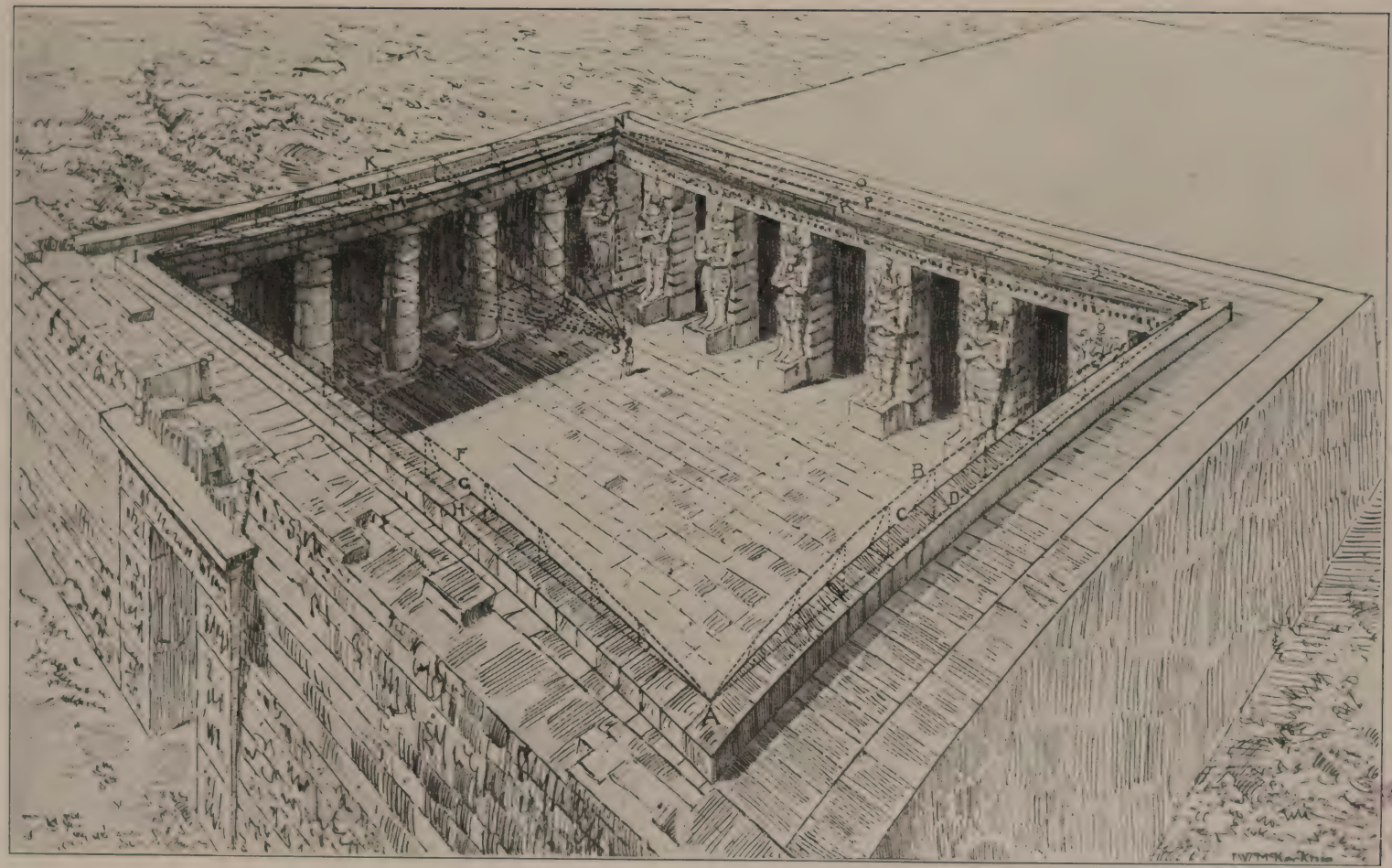


FIG. 6. BIRD'S-EYE VIEW OF THE INNER TEMPLE COURT AT MEDINET HABOU, THEBES.
From a drawing by John W. McKecknie. The upper dotted lines show the optical effect of the curves in plan as seen from an angle of 45° inside the court.



FIG. 7. THE TEMPLE OF CONCORD (SO-CALLED) AT GIRGENTI (NORTH SIDE).
From a photograph of the Brooklyn Museum Survey of 1895. Straight lines have been drawn on the negative to exhibit the rising curves in elevation of the stylobate and entablature.



FIG. 8. WEST FRONT OF THE TEMPLE OF CONCORD (SO-CALLED) AT GIRGENTI.
In parallel perspective. Illustrating the absence of curvature in the entablature, under the gable. Photograph of the Brooklyn Museum Survey of 1895.

error that there is a natural sagging effect in architectural horizontal lines above the level of the eye, and it is now our mission to point out that no optical expert who has made a special study of the Greek curves has ever suggested that such a general sagging effect exists.

Thus the first investigator who made publication on the subject supposed that the Parthenon curves were intended to accent and increase perspective effect, because they develop and accent a form of curve which already exists in the normal optical appearance. This investigator was Hoffer, whose observations, measurements and publications were made in 1838, and thus anticipated the earliest observations of Penrose by seven years and anticipated his publication by thirteen years.

Hoffer's publications were made in the "Wiener Bauzeitung" for 1838, whereas Penrose did not visit Athens till 1845 and did not publish his "Principles of Athenian Architecture" until 1851. The discovery of the Parthenon curves by Pennethorne, in 1837, is generally supposed to have preceded the observations of Hoffer, but the publication of Hoffer long preceded that of Pennethorne, which appeared in 1878.

It will be observed that I am not advocating at present the explanation of Hoffer; I am simply pointing out that he was the first expert who made a special publication on the Greek curves, and that, so far from suggesting that these curves were intended to correct an effect of sagging, he supposed that they were intended to enhance and exaggerate a curve of exactly contrary character, and that this curve was mentioned by him as the ordinary optical appearance due to perspective.

The popular impression that the rising curves were intended to correct an effect of sagging, popularly said to be inherent in horizontal lines generally, is probably simply a misapprehension of the theory of Penrose, who never, however, suggested any such appearance in horizontal lines as a general rule. Penrose rested his theory of correction on the optical tendency of a horizontal cornice to curve downward under a gable, because the angles of the gable tend to appear wider than they actually are; therefore the bottom line appears depressed, and as the appearance of depression gradually decreases according to distance from the angles, therefore the optical effect is a downward curve. According to Penrose, the rising curve under the gable was to correct this effect. But as far as the flanks are concerned Penrose supposed the curves to be explained by the sentiment of beauty and the appearance of strength, but to have been originally suggested by the application of the curve as an optical correction under the gable. Thus we are led next to ascertain the present standing of the gable theory of Penrose, which appears to be the original form of the debated popular impression, although it is really a wholly distinct proposition.

This leads us to consider what other authorities later than Penrose have had to say about his gable theory. This gable theory has never, to my knowledge, been accepted or even favorably mentioned by any German authority. On the contrary, it has been vigorously and successfully contested by both of the two greatest German authorities who have subsequently debated the curves from the standpoint of the expert in optics. First, Thiersch[5] added to a variety of solid arguments one which must appeal to every understanding, whether that of an expert or otherwise. The argument is, namely, this: If Penrose was correct in believing that the curves of the entablature and cornice at the ends of the temple were intended as an optical correction under the gable and to make the lines appear straight, how does it then happen that the stylobate is curved also, for which no such gable effect occurs? This argument is unanswerable. The only objection to it is that it is so simple, so conclusive, and must be so briefly stated, that it falls short of effect from sheer simplicity. It is, however, gilding the lily to elaborate this argument. It is not necessary here to rehearse the alternative suggestion of Thiersch, who

[5]Optische, Täuschungen auf dem Gebiete der Architectur. Zeitschrift für Bauwesen. Vol. XXIII., Ernst und Korn, Berlin, 1873.

thus and otherwise contested the gable theory of Penrose, because it has also been thrown out of court by two subsequent publications. One of these publications was that of Guido Hauck.[6]

Although Hauck abandoned the new explanation of Thiersch, he approved, rehearsed and elaborated the arguments which led Thiersch to reject the theory of Penrose, especially dwelling on the point that the stylobate need not have been curved if the object of the curve was to correct a deflection under the gable. Both Thiersch and Hauck also urge the sensible view that to consider the curves of the entablature on the flanks of a temple as purely an afterthought is a far-fetched and wholly unsupported hypothesis. Let it be also observed that the theories of Thiersch and Hauck, which proposed to supplant the theory of Penrose, make no reference to a general sagging effect in horizontal lines, and Hauck expressly develops the fact that horizontal lines above the level of the eye tend normally to curve downward toward the extremities instead of curving upward toward the extremities, as they would if they had a sagging effect. Thiersch alludes to the same fact as holding for near approach.

The publication of Hauck is undoubtedly the most valuable and far-reaching contribution to the optics of rising curves in elevation which has ever been made. But as an explanation of the subject of curvilinear refinements, viewed as a whole, it has also been thrown out of court. Therefore I need not describe the theory of Hauck. It is sufficient to say that it is based, like the theory of Thiersch, on the form of the Greek temple and on the idea that the curves were invented by the Greeks, and that these curves were always rising curves in elevation.

Neither Thiersch nor Hauck were acquainted with the *curves in plan* of the cornice, convex to the center of the court, in the second Temple Court of Medinet Habou. These curves were discovered by Pennethorne in 1832, but he did not publish them until 1878. This was only a year before Hauck's publication, and the Egyptian curves were still unknown to Hauck in 1879. If the gable theory of Penrose required a final death-blow, it would be furnished by the curves in plan of the second Temple Court of Medinet Habou, where there are naturally no gables. But the curves in plan at Medinet Habou also throw out of court the special theories of both Thiersch and Hauck, and this is why I have not explained them. It will not be overlooked, however, that the optical effect in the cornices at Medinet Habou is that of a rising curve in a vertical plane. At the angle of 45 degrees the spectator has the effect of a rising curve in elevation of an amount equal to that of the curve in plan. At points farther removed the curve appears less. At nearer points the effect is greater and increases enormously on close approach. Thus on close approach the normal perspective curve is much exaggerated.[7]

Still another argument against the gable theory of Penrose is furnished by

[6]Die Subjective Perspektive und die Horizontalen Curvaturen des Dorischen Styls. Dr. Guido Hauck, Stuttgart, Conrad Wittwer, 1879.

[7]The theory of Thiersch, briefly stated, moves from the illusion which tends to affect the appearance of two lines meeting at an angle. These effects were quoted by Penrose for acute angles, as calling for a correction under the gable. Thiersch, however, points out that, whereas acute angles appear larger than they really are, obtuse angles appear smaller. His arguments contend that the direction of Vitruvius regarding the construction of the curves was limited to those temples which stand on an elevated platform above the level of the eye. Thus the Parthenon, as seen by a spectator *looking toward one of the angles*, would exhibit obtuse angles both in the stylobate and in the entablature (with the apex of the angle turned toward the spectator). These angles would appear smaller than they are, and as this effect decreases with the distance from the angle, the lines would appear to curve downward away from the angle. This effect would be corrected by a rising curve in elevation. Hauck contested this explanation on the ground that the optical deflection of the obtuse angle was so inconsiderable that a correction would not be needed, but more particularly because such a correction would in any circumstance only be needed for the spectator looking toward the angle of the building, and would not be needed in views facing the front or sides. Hauck based his own theory on the fact that the intercolumnations of the Parthenon are smaller at the angles, by about two feet, in order to admit of placing the corner metopes at the angles of the building, instead of placing them over the centre of the abacus, where they normally appear. This diminution of spacing gives an increase of perspective from the point of view facing any side of the temple from positions nearly opposite the centre. Hence, according to Hauck, if the perspective rising curves in elevation were not also correspondingly increased, the perspective effect of the columns would be out of harmony with the perspective effect of the horizontal lines. Thus Hauck in a sense returned to the explanation of Hoffer. For although he held that perspective exaggeration, for its own sake, would not have been in line with Greek feeling, he also held that this perspective exaggeration was properly sought in view of the contradictory effects

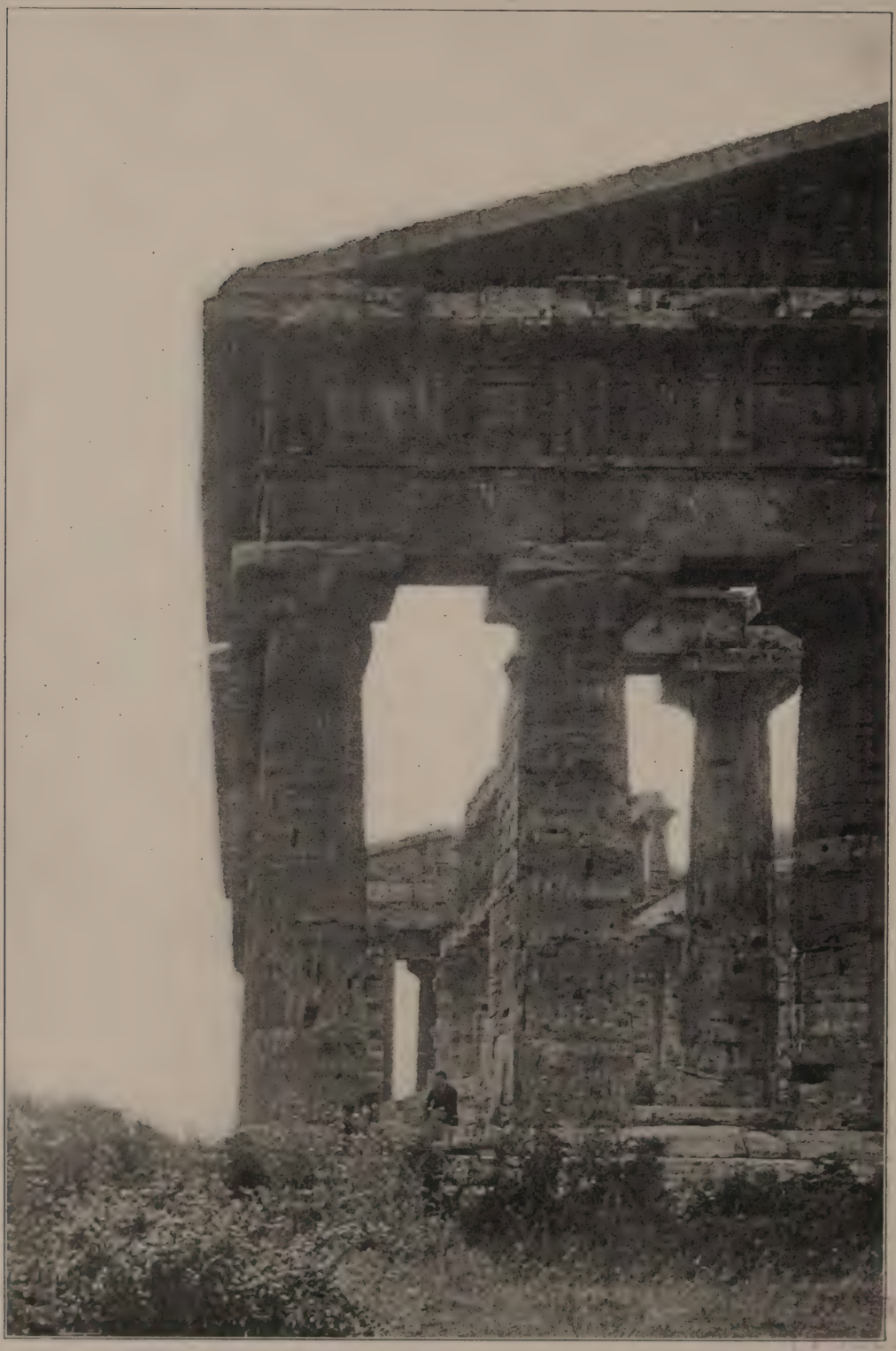


FIG. 9. CURVE IN PLAN, CONVEX TO EXTERIOR, SOUTH SIDE OF THE TEMPLE OF NEPTUNE (SO-CALLED) AT PAESTUM.
Photograph of the Brooklyn Museum Survey of 1895.

the Brooklyn Museum surveys of 1895. The photographs, taken under my direction, of the Temple of Concord, at Girgenti, show that there are rising curves in elevation on the flanks, but no curves under the gable. Hence the curves of the flanks could not well be an afterthought, derived from the curves under the gables, since the latter do not occur in this temple. This very important argument against the gable theory of Penrose has never previously been adequately published. (See Figs. 7, 8.)

Penrose had based his argument for the derivation of curves on the flanks of a temple from the curves under the gable, on the high antiquity of the Neptune Temple, at Pæstum, and on the supposed fact that this temple had curves under the gable, but none on the flanks. Thus, for Penrose, the Neptune Temple represented the primitive stage of the Greek curves, but he was ignorant that Jacob Burckhardt, in his "Cicerone," has announced constructive curves in plan convex to exterior on the flanks of the Temple of Neptune. These curves were photographed for the first time by the Brooklyn Museum surveys of 1895 (Fig. 9).

From the preceding summary two results are fairly well established. First, the popular impression that the Greek curves were intended to make the lines look straight, and to correct effects of sagging supposed to be inherent in straight lines above the eye, is without authority, as far as the quoted experts are concerned, and the theory of Burnouf,[8] in the "Revue Generale de l'Architecture" for 1875 is too fanciful to require more than passing mention here. The second result is this: As far as Penrose is concerned, he only suggested a sagging effect under the gables at the ends of a temple as the explanation of the curves. Against this theory the following points may be urged: It has not been accepted nor favorably mentioned by any French or German expert; it has been vigorously opposed by two distinguished experts in optics, and the theory

otherwise produced by the necessary narrowing of the angle intercolumnations.

As the title of Professor Hauck's monograph indicates, he supposed that the Greek curves were confined to the Doric style, in which style alone the angle intercolumnations were reduced, in order to allow the triglyphs to be placed at the angles of the temple. Since that date the discovery of curves in the Ionic temple at Pergamus would have vitiated his theory, but it is also wholly unavailable for the interior curves of the second Temple Court at Medinet Habou, which are convex in plan, to the center of the court. As far as the theory of Thiersch is concerned the openings of the obtuse angles in the interior of the court at Medinet Habou are turned toward the spectator, not away from him (as in the exterior of a Greek temple). The angle illusion, if any were produced, would, therefore, be a rising curve in elevation and would thus need no correction. Although the theories of Thiersch and Hauck are no longer tenable, their publications still have great interest and importance as *critiques* of the theory of Penrose, and otherwise.

It ought perhaps to be added that the theory of Thiersch is the only one which has ever even been offered to explain the account of Vitruvius. Although the explanation of Vitruvius has been otherwise universally discarded; or (more generally) ignored, the meaning of the explanation certainly ought to be susceptible of explanation, even if it were not correct. Vitruvius directs that the stylobate of the temple shall be built with a rising curve in elevation, lest it appear "alveolated" (like the bed of a channel) and the curves of the entablature are considered as a mere outcome or logical sequence of the stylobate curve. Thiersch moves from the fact that Vitruvius is speaking of temples resting on a *podium*, that is above the level of the eye of the exterior spectator and that the effect of sagging from the exterior point of view was to be counteracted by the curve. I will venture to suggest that Vitruvius is speaking of an effect of "alveolation" for the spectator standing on the platform. It is a logical result of the laws of curvilinear perspective that all plane surfaces below the level of the eye must tend optically to "dish," that is to appear like a dish or bowl. Aeronauts find this appearance in the earth's surface when raised above it in a balloon, for the same optical reason. The same optical laws explain the dome-shaped appearance of the sky. Thus, although the explanation of Vitruvius is certainly insufficient to cover the known facts, it appears to be a common-sense and practical explanation, which deserves recognition and mention, among the many which have been offered. The explanation of Vitruvius is additionally interesting from the fact that it is not simply the outer porticos of the Parthenon which have the stylobate curves. The entire platform of the temple is delicately hemispherical or, as the French would say *bombe*.

[8]Even the briefest mention of Burnouf ought not, however, to omit to give him credit for having, alone among modern authors, given the correct explanation of the *scamilli impares* of Vitruvius. Penrose supposed that the *scamilli impares* were the drums of the columns which rested on the stylobate. These drums, in the Parthenon, are of unequal height on opposing sides. Otherwise the columns resting on the curved and sloping surface would lean away from the centre of the temple. This interesting proof of the intended construction of the curves is not, however, the true explanation of the *scamilli impares*, by means of which the curves were to be constructed. Even in the second edition of his "Principles of Athenian Architecture," published in 1888, Penrose was still ignorant of the obviously correct explanation offered by Burnouf in 1875. It is significant of the general neglect by archaeologists of the subject of Greek curves that Burnouf's explanation has not even been alluded to by any other authority.

Burnouf points out that *scamillus* is a diminutive of skamnon and may be translated as "a little stool"—Burnouf says *un petit banc*. These little stools were the small pyramid-shaped sighting blocks which are still used in France for levelling a line of steps or a masonry platform. If placed in graded unequal sizes, gradually increasing in height from the centre toward the extremities of the line of steps, such *scamilli* could be used for constructing a curve and, as Burnouf says, it was as easy in antiquity to construct a curve with these implements, as it now is to build to a level. He also mentions that such *scamilli impares* must have been used for building curves in plan.

of Hoffer is also opposed to it in principle; it is finally thrown out of court by known facts in Egypt and at Girgenti.

We are now able to return to the discovery of Professor Giovannoni at Cori.

Popular impressions are not so easily blighted as scientific or archæologic theories. Every man in the street who has heard of Greek curves will tell us that they were meant to make the lines look straight, and will so continue to tell us long after the publication of Professor Giovannoni's discovery. But considered as a scientific or archæologic theory, the discovery at Cori disposes of the gable theory of Penrose for all time as a general or universal explanation of the classic curves, for the simple reason that this curve produces a sagging effect in the upper horizontal line, and therefore could not counteract one.

But the discovery does far more than this; it forces a revision of most of the other theories on Greek curves and widens our views regarding them to a very remarkable extent. And before I take up this phase of the subject I wish to point out the possibility that the curves at Cori may not be the only ones which are concave to the exterior, even in existing classic monuments.

Pennethorne observed curves *in plan* concave to the exterior in the upper entablature at the ends of the Parthenon. Hoffer explicitly described the same curves and measured them. The plan of these concave curves, with measurements, is published in the "Wiener Bauzeitung" of 1838. Hoffer described these curves in plan as beginning in the capital, as continuing in the entablature and cornice, but as not being found in the tympanum. They amount to about two inches only at the cornice. Penrose quotes the observation of Pennethorne and gives his reasons for believing the curves to be accidental. In deference to Penrose, Pennethorne, in 1878, adopted his view that these curves were accidental. The argument of Penrose is that the gaps between joints were greater in the rear than in the front. Hoffer's observation that the tympanum surface is a straight line would appear to suggest that the curves above and below it could hardly be due to accidental movement. No decision on such a head can be reached or even suggested in this paper, and the explosion which ruined the Parthenon is not to be forgotten, but it is surely worth remembering, in face of the concave curves at Cori, that concave curves in the Parthenon gable fronts were observed, measured and published in 1838 by Hoffer as constructive.

There is another observation on this head which is attested by the photograph published herewith. In 1895 I observed curves in plan concave to exterior in the eastern pediment of the Temple of Neptune at Pæstum, and they were photographed in 1895, as attested by Fig. 10. This photograph shows the concave curve in the line of abaci as well as in the cornice. I have never previously published these facts, for lack of time and opportunity, but I was moved by the observation at Cori to make it known to Professor Giovannoni and to send him a photograph. This observation has been laid before the Roman Society by Professor Giovannoni at their session of November 6, 1906, and the President of the Society has been kind enough to write me a congratulatory letter on this subject. It appears to me of high importance that the curve in plan at Pæstum concave to exterior should be carefully examined by experts on the site. Whatever the result at Pæstum might be, the curves at Cori still remain the first conclusively demonstrated constructive curves in plan, concave to exterior, which have ever been found in the construction of a classic monument.

This is the proper point at which to close this paper, for it is not my purpose to explain these concave curves. As long as it appears certain that the facts now known are sufficient to compel new explanations, it seems hardly worth while to figure as a theorizer. It is mainly my wish to show that previous explanations of the classic curves are insufficient to cover the facts now known. I may, however, add that Professor Giovannoni's announcement of the curves at Cori was made to the Roman Society of Architects in a report of a favorable nature regarding my own observations of mediæval



FIG. 10. CURVES IN PLAN, CONCAVE TO EXTERIOR, EAST FRONT OF THE TEMPLE OF NEPTUNE (SO-CALLED) AT PAESTUM.
Photograph of the Brooklyn Museum Survey of 1895.

asymmetries and deflections. Therefore, I may add also that the closest mediæval analogy to the façade at Cori is that offered by the lower façade of St. Mark's at Venice, which curves concave to exterior from the foundations up, with a deflection of ten inches at the foundations (Fig. 11).

It appears improbable that the façade of St. Mark's was curved expressly for effects of concavity in the upper line.[9] It is rather probable that the entire surface of the façade was considered. As regards line effects, they would, below the level of the eye, produce the optical effect of rising curves in vertical planes. Above the level of the eye they would produce the optical effect of descending curves in vertical planes. These line effects are optically contradictory, and therefore optically illusive. They must therefore give to the façade an effect of "life" or of optical mystery and vibration.

As regards views slanting along the façade of St. Mark's from left to right, or vice versa, the perspective effect is enlarged very considerably in the way of magnitude, if the terminal upright lines, rather than the upper horizontal lines, be considered. But here again it appears more likely that an effect of optical mystery and vibration rather than a direct increase of size in perspective was considered. It may be that the varied effects of light and shadow which are involved in a curved surface were the dominant considerations.

As regards the façade of St. Mark's, it should be remembered that only the lower façade is in question, and not the upper façade, which sets back of a wide platform, bounded by the cornice of the lower façade. Although this cornice has not been leveled or plumbed, it appears to rise from the extremities toward the center, so as to correct the effect of concavity at the roof line. In the upper façade the pinnacles are arranged in descending heights from the center towards the extremities.

In simple language, and aside from optical explanations, the façade of St. Mark's, in my opinion, gains vastly in artistic charm by its delicately and imperceptibly curvilinear surface, as well as by its subtle variations in the dimensions of the arcades. If mediæval curves be admitted to have been constructed at all, it must be conceded that the lively effect of the curved line or surface was held to be superior to the rigidity and greater formalism of the straight or plane surface, and that no other universal explanation can be offered. Whether or no this lively effect is physiologically due to optical mystery, which is again due to an optical vibration between the contradictory optical effects which must always be found in delicately distorted architectural surfaces or lines, or whether it is due to varied effects of shadow, is hardly worth debating. It may be that both explanations have to be considered. I offer the suggestion for what it is worth, with the remark that the concave curve in plan at Cori demands some kind of explanation.

If mediæval analogies be excluded, it is still evident that some explanation similar to those which have just been offered for them must now be sought for such ancient curves as are found at Cori. This involves farther reference to the concave curves in the Parthenon, if for no other reason than the one that other experts than Hoffer have already been inclined to admit their constructive existence. Thus Reber,[10] a German authority of high standing, considers the concave curves of the Parthenon to be constructive. His explanation is significant for the fact that the optical effect, in front view, is that of a descending curve in a vertical plane, which equals the amount of the curve in plan at the angle of 45 degrees, which decreases in amount from farther points of view, and which increases in amount on nearer approach. Reber holds that the concave curve was intended to contradict and decrease the excessive curve in elevation due to the combination of the optical perspective effect in elevation, on close approach,

[9] And especially so for the reason mentioned later in text that the cornice line appears to the eye to be built with slight obliquities rising from each end toward the centre, so as to correct the effect of concavity.

[10] Kunstgeschicte des Alterthums, p. 207.



FIG. 11. CURVE IN PLAN, CONCAVE TO EXTERIOR, FAÇADE OF ST. MARK'S AT VENICE.
The deflection, of ten inches, is best seen on the outer line of the paving slabs in front of the church. Photograph of the Brooklyn Museum Survey of 1905.

with the constructive curve in elevation. The interesting feature of this explanation (although it cannot be applied to Cori) is that it realizes the two effects as being contradictory. Hauck quotes the explanation of Reber with tentative approval[11] as an explanation, but expressly affirming the principle that the effects of a rising curve in elevation and of a concave curve in plan are contradictory, and that the optical effect of the concave curve is that of a descending curve in a vertical plane. It is, of course, understood, as Hauck points out, that the contradictory effect is insignificant from distant points and then almost disappears.[12] It is also understood, whereas the rising curve in elevation has its greatest relative effect from a distance, that the optical perspective curve is far the greater on close approach, so much so that on close approach the constructed curve in elevation is not an important addition to its amount. Neither Reber nor Hauck have considered the possibility that the concave curve might have been considered desirable for its effects from the slanting side view, and Hoffer is at a loss for any explanation.

Although the constructive facts in the Parthenon may be held to be doubtful, the above explanations are of value as showing the difficulties which have hitherto surrounded the explanations of concave curves in plan, and also as showing that the effects of concave curves in plan above the level of the eye are recognized by optical experts as being those of descending curves in elevation for the front view.

The constructive facts at Pæstum do not appear to be open to suspicion, and here again there are also rising curves in elevation at each end of the temple.

If either the Temple of Neptune concave curves or the Parthenon concave curves are admitted to be constructive, it must also be admitted that contradictory effects exist for certain points of view, and it remains to be debated whether the side effect was not the one which was considered for the concave curve.

[11] pp. 109, 144, Op. cit.

[12] It would disappear entirely when the eye is on the level of the concave curve. Here the concave curve appears as a straight line.

For the Temple of Cori the question is not complicated by the existence of curves with contradictory effects, but it still remains to be debated whether the side effect was not considered as much as the front view. The Temple of Cori stands on a high elevation, and the lower position of the approaching spectator would, on near approach, much increase the optically descending effect toward the center of the curve. For such points of view it could only be presumed that the curve was considered more agreeable than the straight line, without reference to the question whether it were a rising or a descending curve. For side view the effects would be optically contradictory as regards perspective, an effect of increase if the vertical terminal lines be considered, and an effect of decrease if the upper horizontal lines be considered.

It is a natural result of our interest in the surviving ancient monuments that we overlook their actually very small number and the enormous number of those which have utterly disappeared. The discovery at Cori makes it probable that curves were employed in ancient art to a much greater extent and in much greater variety than has hitherto been supposed.

In a paper which I published in the Journal of the Archæological Institute of America, Vol. VI., No. 2, New Series (1902), "Architectural Refinements in Italian Churches," I discussed the optical effects of the cloister curves, convex to the center of the court, at Verona and Bologna. I pointed out that the line effects were contradictory above and below the level of the eye inside the corridors, and that they were again contradictory, but in the reverse sense, as observed from the court. From this I argued that the curve must have been preferred for its own sake and independent of any definite particular perspective effect. It has since occurred to me that an effect of vibration or of optical mystery in such curved lines or surfaces must result from the shifting of the eye to different lines or planes of sight or from the inclusion at points more distant from the eye of such contradictory effects within the limits of

fixed vision in a single direction. In churches like S. Apollinare Nuovo, at Ravenna, which have true parallel curves in plan in the alignment of columns, continuing in the walls of the clerestory, it is evident that the optical effects must be contradictory on the two sides of the nave, because the columns and wall surfaces are concave to the nave on one side and convex on the other.

In the Pisa Cathedral, moreover, where the gallery parapets are built in parallel curves in plan (which continue in the walls above), the same parapets also have constructive rising bends in elevation (Architectural Record, VI., 4).

Thus, from the pavement below, the curve in plan increases the effect of the bend in elevation on the south side, where it is convex to the nave, and it decreases it on the north side, where it is concave to the nave. (For the north side of the nave, the facts are analogous to those in the Temple of Neptune at Pæstum, and in the Parthenon, where contradictory effects are found in the cornice.) It may also be pointed out that, wholly aside from curves, it has always been contended by the writer that effects of optical mystery were studied at Pisa. The explanation is offered for what it is worth, and any others would be equally satisfactory to the writer which cover all the constructive facts.

Finally, as regards relationship in feeling, if not in continuity of historic practice, as between Antiquity and the Byzantine Romanesque monuments of Italy, the authority of Jacob Burckhardt may be cited. Ernst Foerster, in his Guide-Book for Italy, was apparently the first to announce intentional irregularities of line in the Pisa Cathedral. He held them to be "die unbeholfensten Aeusserungen des Romanischen Kunstgeistes." Jacob Burckhardt's foot-note to the Leaning Tower in his "Cicerone" in the first and second editions (this foot-note was subsequently removed from the text) quotes Foerster's idea as follows:

"For the history of art, Foerster's opinion about the relation of the Leaning Tower to the irregularities of measurement, oblique and bent lines, irregular intervals, etc., would be much more important [than his opinion about the Tower itself]. In all these things he sees a dislike of mathematical regularity and of exact symmetry. These are said to be the clumsy expression of Romanesque endeavor. (Die unbeholfensten Aeusserungen Romantischer Bestrebungen.) *Since we must unconditionally admit something of the kind in Greek temples, this view has something very attractive.* I believe, however, that the given phenomena must be otherwise explained, and, namely, not by want of dexterity—which could not be suggested for the noble Pisan buildings—but by an indifference to mathematical accuracy, which was peculiar to the earlier Middle Age."

Burckhardt then proceeds to give examples of this indifference (which certainly also existed). The foot-note just quoted inspired me to make a personal call on Jacob Burckhardt at Basel in 1870. I showed him the measurements and drawings which I had just brought from Pisa. He advised immediate publication, and professed his previous ignorance of the facts thus brought to his notice. Thus my own contact with Burckhardt shows that he was not familiar with the constructive facts at Pisa, whereas to him belongs the original suggestion that if the constructive facts exist they would be analogous in feeling to the deflections and asymmetries of Greek temples. To Foerster, on the other hand, belongs the original suggestion that obliquities and bends were intentionally constructed at Pisa. He can hardly, however, have noted the true and delicate curves which are also found in the cathedral, for these certainly can not be called clumsy.

As a final suggestion for façades like those of St. Mark's and Cori, it appears that the varying effects of light and shadow may have been the important consideration. Since these varying effects of light and shadow were notoriously studied with the greatest care in the profiles of classic architecture, why may they not have been considered for the surface of the façade at Cori? The same explanation suffices for the concave curves of Pæstum and of the Parthenon.

William H. Goodyear.



THE LADY CHAPEL—ST. PATRICK'S CATHEDRAL, NEW YORK.
The exterior from the east side of Madison Avenue.
(Photo by A. Patzig.) Charles T. Mathews, Architect.

The New Lady Chapel at St. Patrick's Cathedral, New York

It was a practice in England during the Middle Ages to dedicate to the Virgin Mary that chapel in the cathedral which was situated in the middle of the apse directly back of the high altar. In France also there was the same custom, though it was not so common, and in Italy, where Gothic traditions were never deeply rooted, the practice was still less usual. It was due to its dedication that this particular chapel came to be known as the Chapel of Our Lady, a term which was finally contracted into the simpler form, Lady Chapel, which is still in use throughout England.

It is also an ancient custom to reserve the Host or Blessed Sacrament in the tabernacle on the altar of the Lady Chapel, except at such times when for various reasons it may be removed to some other altar in the church, always, however, to be returned to its permanent shrine. It was owing perhaps to both its dedication and its use that the Lady Chapel was generally treated by the Gothic builders with an architecture more delicate and ornamental than that employed throughout the cathedral. It seemed to become in some cases a great reliquary upon which all the arts of the architect, the sculptor, the metal worker and the painter on glass were lavished.

When the Cathedral of St. Patrick was built in New York City this important feature of the building, the Lady Chapel, was omitted. The cathedral terminated abruptly behind the high altar, and a chapel was fitted up at the termination of the north side aisle which was used temporarily as a Lady Chapel. It was not until six years ago, in 1901, that it was decided that the east end of the cathedral should be reconstructed and properly terminated by a chapel which was to be known as the Lady Chapel.

A competition was therefore held to which fifteen architects were invited. Representatives from England and France, as well as native architects, were asked to submit designs for this remodelling of the eastern end of the cathedral, so that the event had, as it was quite proper that it should have, an international interest, New York being one of the most important sees of the Roman church not only in America, but in the whole world.

It was arranged that the decision as to the successful competitor should be made in this rather original manner: Prof. William R. Ware, of the School of Architecture of Columbia University, as architectural expert, was to select the design which to his mind best solved the problem architecturally. Then the Archbishop of New York, at that time the late Archbishop Corrigan, was to select the one that seemed to him the most satisfactory from the ecclesiastical point of view, and lastly the donors were to select the one which personally pleased them most. The final award was then to be made from the designs selected by these three parties.

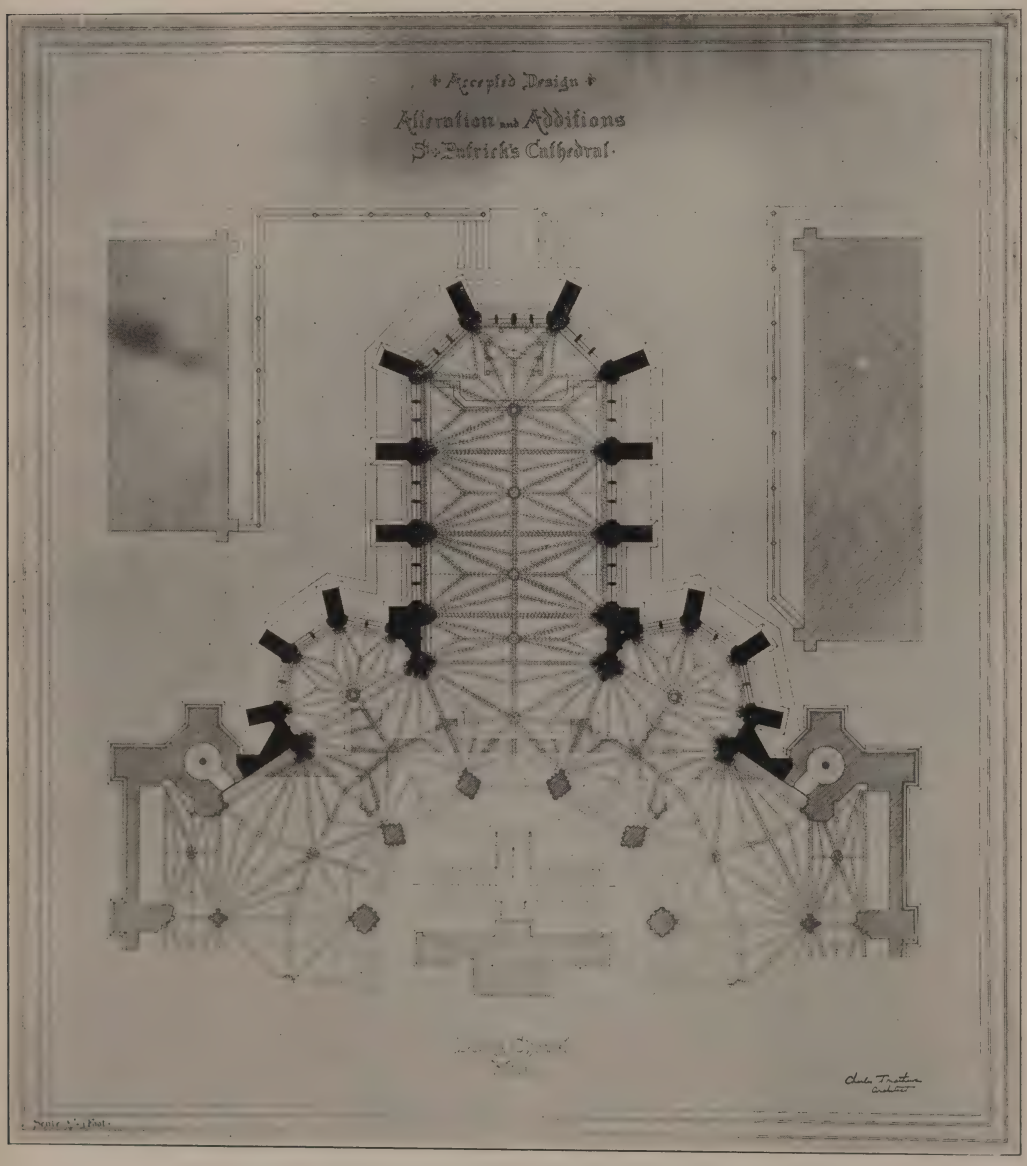
The drawings, of course, were unsigned, so that their authors were unknown to the judges, who did not obtain this information until the final decision.

It happened, to the great satisfaction of all concerned, that the three judges each recommended the same design for the final award. This therefore made further selection unnecessary, and the architect, Mr. Charles T. Mathews, who was the author of the design which had won the favor and commendation of each of the three judges, received the commission for the work.

Of the designs submitted by the foreign competitors, one exhibited an amusing disregard for existing conditions which were of course fully set forth in the programme. The author of this particular set of drawings, disregarding entirely the city's rights to Madison Avenue, continued his building across this thoroughfare, terminating it in the court

of the Villard houses on the other side of the way. This gentleman's muse was evidently unfamiliar either with municipal rights or the prices obtainable in the New York real estate market. In correspondence with him in relation to this disregard of the conditions, he merely replied that the street might be changed. A small matter, surely, where the aspect of a cathedral was concerned.

There is in every architectural problem a fundamental question, the solution of which is the key to the whole problem. What it is may not be known to the writers of the programme, nor yet to the competitors. It is sometimes not even known to the man who has successfully solved it. It appears, generally, at the judgment when all the designs are brought together. One sees



THE LADY CHAPEL—ST. PATRICK'S CATHEDRAL, NEW YORK—PLAN.
Showing the new construction in black. Charles T. Mathews, Architect.
(Photo by A. Patzig.)



THE LADY CHAPEL—ST. PATRICK'S CATHEDRAL, NEW YORK.
View from the ambulatory, looking into the chapel.
(Photo by A. Patzig.) Charles T. Mathews, Architect.

then the eminent and evident question, with its quite as clearly defined answer, upon which the whole solution depends.

In this problem of the Lady Chapel it was not so much the chapel itself which was the problem as the treatment of the rear wall of the cathedral, which

gether with the façade of the old Academy of Design which stood at the corner of Twenty-third street and Fourth avenue, in the construction of a church uptown dedicated to Our Lady of Lourdes, to which an article was devoted in the April issue of the Architectural Record.



THE LADY CHAPEL—ST. PATRICK'S CATHEDRAL, NEW YORK— THE CRYPT.
Located directly under the altar of the chapel and to be occupied by the tombs of the donors.
(Photo by A. Patzig.) Charles T. Mathews, Architect.

the programme stated might be remodeled, or in other words, the joining of the chapel to the cathedral.

In the successful design the rear wall was removed, and now it may be interesting to know, has been utilized, to-

The rear wall, which abruptly terminated the side aisles, having been removed, it was then possible to continue the side aisles in an ambulatory around back of the high altar. The Lady Chapel with its two small semi-octagonal flank-

ing chapels was then placed at the rear of the ambulatory, through which it is reached from the church.

This solution decreased the available depth for the chapel, but on the other hand, and what was a greater gain, the cathedral was lengthened and the vista pers who wish to assist at these functions. Therefore, although the ambulatory decreases its depth, it in no way interferes with the practical seating capacity of the chapel.

The problem since the writing of the programme for the competition has be-



INTERIOR ST. PATRICK'S CATHEDRAL, NEW YORK.
Showing the opening up of the vista beyond the high altar.
(Photo by A. Patzig.) Charles T. Mathews, Architect.

opened up behind the high altar, so that now the cathedral seems at least half again as long as formerly. The floor space devoted to the ambulatory is by no means wasted, for during services in the chapel it is available for worship-

come more complicated by the addition of various features. First the design was changed in order to provide for a sacristy underneath the chapel, with a crypt for the tombs of the donors immediately below the altar. Then by ex-

cavating for two rooms, dependencies of the sacristy, one on either side of the chapel, underneath the terrace, with a floor level a few feet lower than the sacristy; then by excavating still another story down under the chapel in order to provide a sub-cellar; and finally, by the construction of a boiler room placed beneath the terrace on the north side of the chapel.

The entrance to the sacristy is down a stairway directly behind the high altar, from which it is closed off by a bronze grille bearing in high relief the coat of arms of the late Pope Leo XIII., during whose pontificate the greater part of the chapel was constructed.

This placing of the sacristy in the basement is a modern innovation, the ancient custom being to locate the sacristy in an addition at the side of the church, or in a separate building connected with it by a covered passage, and this is the plan ultimately to be carried out at the cathedral.

The basement sacristy is, however, by no means illogical or inconsistent, even where economy does not force upon the designer, as it did here, the condition of keeping the sacristy within the walls of the cathedral. Its position is central, and its entrance is screened from view by the reredos of the high altar.

The lighting of the underground sacristy presented a problem which was solved in an ingenious manner. Gothic churches of the thirteenth century do not have basement windows; they rise in a wall of solid masonry, which produces a feeling of strength and stability. If this base is pierced by windows this impression of strength is to some extent lost and the character of the building changed.

To overcome this difficulty areas were cut between the buttresses in the large base or stylobate from which the chapel rises, this base being so high that the gratings over the areas are not visible from the street or the terrace. The sacristy windows, opening into these areas, are of opaque leaded glass, so in the interior one does not in the least have the impression of being in a room which is more than half underground.

The construction of the stairway to the sacristy necessitated a delicate piece of engineering which was finally successfully achieved, though not without considerable anxiety to every one involved. The stairway passes between the foundations of the two rear piers of the cathedral, which support the clerestory walls of the choir. These were built on the solid rock, and the construction of the stairway necessitated the removal of the rock between these piers. Blasting between these foundations was a very delicate operation, during which the slightest accident might have wrecked the entire cathedral. The work was successfully carried through, however, leaving the foundations in better condition than they were before.

The style employed by Mr. Mathews for the architecture of the chapel is the Gothic of France in the thirteenth century, though as we get towards the top of the structure some of the carving, particularly that on the pinnacles of the buttresses, has the character of the more ornate work of the early fourteenth century, giving the impression of a building whose construction had extended from one century into the other. The aim has been to make the structure as nearly as possible archeologically correct, and the greatest care has been taken with all the details, in order to bring about this result. The profiles of the moldings have been very carefully studied, especially those arch and gable moldings which appear in elongated vertical sections on the sides of the buttresses. This very characteristic feature is usually avoided in modern work, it being easier and cheaper either to continue the moldings down to the sill or to terminate them on a horizontal band at the spring of the arch.

The modeling of the grotesques and foliage were done under the personal supervision of the architect, and in some cases they are the work of his own hand. The gargoyles are not as fantastic as those which were originally designed for the purpose, having been toned down in deference to the wishes of some of the authorities who did not realize that the Gothic builders carved these ugly monsters to represent the evil spirits who

were striving to fly away from the sacred edifice.

As compared with the cathedral, the chapel is more refined in scale. The moldings are sharper, the carvings have more sparkle and the architecture, as a whole, is more ornate and elaborate. It is a rich and delicate pendant to the cathedral rather than a glorious crown, as is suggested by the chevet of the French cathedrals.

An original feature in the treatment of the exterior is the small octagonal spire, decorated with open tracery, which is placed over each of the flanking chapels. These are the means of hiding in a very clever manner the awkward silhouette of the main roof. The roof of the ambulatory is lower than the roof of the chapel, being a continuation of the roof of the side aisle, consequently we have in silhouette: first, the high choir wall, then a drop down for the roof of the ambulatory, then a rise for the roof of the chapel. The reason, of course, for making the roof of the ambulatory low is to get the full amount of light into the choir. If the ridge of the chapel roof were carried back to the choir wall it would be impossible to bring the rear choir window down to the same level as the others. In most French churches this unpleasant line is rarely seen, on account of the maze of flying buttresses which loses the outline of the roof, but at St. Patrick's, unfortunately, on account of the vaults being in plaster and not in stone, there are no flying buttresses, and it has been necessary to resort to this device, which is both ingenious and effective.

With the exception of the large bronze statue of the Virgin, which is to be placed at the end of the ridge of the roof, the exterior of the chapel is now practically complete, though, owing to its position between the archi-episcopal residence and the rector's house, it is impossible to obtain a comprehensive view of it. The removal of these two buildings would be a distinct gain not only to the chapel but to the cathedral itself.

The stone used in the construction of the cathedral is dolomite, but for the Lady Chapel it was found impossible to obtain the same stone, as the original quarry was in no condition to yield large blocks. It was therefore decided to employ an entirely different sort of stone, and a very fine quality of Vermont marble was selected for the purpose, which weathers to warmer tones than the cold greys of the dolomite. The roof and the flêche, which are of copper, together with the bronze figure of the Virgin, will, in a short time, take on patina, which will give a touch of color to the roof, lightening up this feature, which now, perhaps, seems a bit dark and heavy.

In the interior much remains to be done before it may be said to be complete. Everything in the interior is stone, with the unfortunate exception, as in the body of the church, of the vaults, which in this case are made in plaster on expanded metal. All the thrusts, however, for a stone vaulted ceiling have been computed and the buttresses are built sufficiently strong to withstand them. It is to be hoped that before many years means may be provided for giving to these buttresses the work for which they were designed and constructed.

The pavement of the chapel is of polished marble, inlaid in a gothic pattern, yellow, grey, green and white being the colors employed. In the middle of the pavement are inlaid the arms of Leo XIII. in bronze relief.

So far, the pavement is the only color to relieve the whiteness of the interior, with the exception of the unpleasant bluish green glass which has been temporarily put in the windows until the permanent glass is placed.

It is the intention to have the finished windows up before any other work is done on the interior, which is a very sensible method of procedure, for the windows contribute more than anything else to the color of the interior. Their tone should therefore be established in order that the other work may be made to harmonize with the background and atmosphere which they create. It is a hopeless task to try to design windows for an interior, the color scheme of which is already established. Everything is liable to be changed in the new light which they produce.

The type of window to be employed

is the medallion window, of which there are such fine examples at the Cathedral of Chartres. Those tapestries of jeweled splendor in which one at first sees only a geometrical pattern, but which on closer inspection prove to be numerous small figure compositions, divided one from another by the geometrical pattern that frames them.

There being fifteen windows in the chapel, including those of the small flanking chapels, the fifteen Mysteries have been chosen as the subjects which they are to illustrate. The large medallion at the top of each window is to set forth the Mystery itself, while the lower part is to be made up of compositions representing the prophecies which foretold, or the types and symbols of the particular Mystery in the medallion above.

It is cause for rejoicing that we are to be spared in this chapel at least the carefully painted colossal figure compositions in Munich glass which are used in the windows of the cathedral itself and which in no way suggest the beautiful jewel-like glass with which the Gothic builders filled the windows of their churches.

An elaborate bronze baldacchino and screen are to form the climax of the interior scheme. This is to be made a very brilliant feature by gilding all the decorated surfaces, which will reflect the light at all angles.

As has already been mentioned, one of the greatest advantages of the new chapel, or in the solution of the problem which has now been realized, is the gain which comes to the interior of the cathedral in added length and increased interest at the end of the vista, which formerly terminated abruptly behind the high altar. Now one sees, back of the great reredos, a mysterious maze of arches and columns and vaults, continuing the perspective beyond until it is lost in the dimness of the interior, through which, at the end of the vista, glow the Mysteries of the Faith in flaming jewels of light.

A. H. Gumaer.



THE UNIVERSITY BUILDING.
Evanston, Ill. Geo. W. Maher, Architect.
Detail of caps at entrance, showing motif of ornament, the poppy.

A Plea for An Indigenous Art

A certain Eastern publication in an editorial of recent date comments upon what it terms evidences of an architectural unrest prevalent throughout the country, especially among the architects of the so-called middle west. It declares that those who have dared to criticize certain models of architecture as being unsuited to our present day conditions and therefore un-American to be pessimists, who failing to understand the truth, stand in need of enlightenment and are recommended to turn their faces eastward and there behold the "designs of cultivated beauty each with the stamp of the best American civilization upon it." This discussion emanates from an article which appeared in one of our Western publications, entitled "The Western Spirit." The article was written under the firm conviction that a new era, particularly in architecture, was at hand, not only in America, but throughout the civilized world. Those who have of late observed any of the leading publications of Europe must agree that this unrest, this movement for a new art, is there deep-rooted and momentarily gaining strength, interesting the most advanced and progressive minds, and all this in spite of the hindrance imposed by tradition. Thus do we see traditional Europe emerging from the great transition which followed the overthrow of the art of the middle ages. In this country there is every evidence of extreme progress along modern lines, for here we are not hindered by precedent. True, our art is but rudimentary, though many-sided in its development, not always chiseled and perfect, nor yet idealistic, but withal expressive of the country's rapid growth, where utility is the keynote and the practical motif dominant. Fundamentally this could not be otherwise, since here is a new country where the problems of existence are being remodeled, where the people themselves breathe of an expression their own, where in time to come simplicity



THE UNIVERSITY BUILDING.
Evanston, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

will prevail in its purest form, and art will become individualistic, an exponent of the surrounding life, a symphony dealing with the grandeur of actual existence. In contrast to this is the art of precedent, dealing altogether with the past, and therefore fettered hand and foot in its execution. It has been suggested by some critics that business activity, commercialism, is the tap-root of the so-called unrest.



THE UNIVERSITY BUILDING—ENTRANCE TO OFFICES.
Evanston Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

On reflection no one can agree with such a statement. Such a cause is not a vital issue at all in this vast phenomenon. This wondrous agitation is not bounded on the east by the Atlantic, nor by the Pacific on the west, but rather extends in its momentousness throughout the civilized world. A thoughtful, analytical revolution is upon the minds of men. Evidence of the greatest advancement in the annals of history is apparent. The human mind is struggling with the mighty past, seeking to properly classify and index for future reference its conclusions, its failures and successes. Under the influence of modern thought and scientific research, many changes are being made in the forms of religion, government, in literature and the arts, adapting them to the demands of the present age. Phases of understanding and action that half a century ago were considered revolutionary in principle are now accepted as most conservative and rational. We must not limit the confines of such a revolt against the letter of the past to so passing a fancy as commercialism. The commercialism alluded to is but a phase of this vast mental activity; a necessity, as it were, in this stage of the development of a comparatively uncultivated soil, where the resources for production are yet in their infancy. Rather let us seek for the cause of this agitation in the great law of the universe, the immutable law of evolution. This law becomes comprehensible only as we move from the past forward into a higher state of being in which man's

inner self becomes exalted, his intelligence enlarged, where individuality becomes preeminent, and girds itself for nobler deeds.

Inspired by pulsating life and nature tangible motifs appear, the products of knowledge gained through a right interpretation of truth. In striking contrast are inspirations based wholly upon the form of precedent. Such inspiration should enter but vaguely into present day themes and their influence should have little to do with the guidance of



RESIDENCE OF MR. JOHN FARSON.

Oak Park, Ill. Geo. W. Maher, Architect.

The American Honeysuckle was used as the flower motif in the design and decoration of this house.

(Photo by Henry Fuermann.)

future efforts. An incentive thus inspired may even be a menace to posterity. If we constantly copy the architecture of past ages, to the jotting down of every proportion, every detail with no attempt to vitalize any portion of it from life's great inspiration, we dishonor the past by plagiarizing it and the work then produced must necessarily be meaningless as genuine works of art. It is not logical to argue that we should use the old forms as a child would in building his imaginative houses with set forms of blocks. How ludicrous to produce modern creations of art on this principle and then to designate such efforts as American.

It is logical to expect in nature a product indigenous to its soil and climate, likewise every age forms its own achievements from its ideals. So in art every succeeding age must produce its own standard of perfection viewing this problem from its own standpoint. The Greek inspired by principles, intellectual and ethical, to which religious fervor and mysticism were in a sense subordinate, gave expression to his ideals through the horizontal line, a distinctive principle of Grecian architecture. On the other hand, the Goth cradled in mysticism under the pathos of climatic conditions inspired by the lofty trees of the north reaching heavenward, gave expression to his aspirations in the perpendicular line, the dominant line in gothic architecture. These two great representatives of human effort labored through these contrasting methods to express their ideals of architectural beauty.

It has been the problem of all ages since the discovery of these contrasting methods, the basic of all construction,

how to rationally adapt these principles to the ever-changing periods and conditions. Many and various are the methods that have been employed by succeeding generations and well have they stamped their individuality upon respective styles. It seems, however, that in the latter part of the nineteenth century the struggle for originality has in a measure been abandoned and a return to the old exact forms is being encouraged, particularly those forms known as the classic. For example, in the use of a column, instead of endeavoring to individualize the base, the shaft and the cap, the method prevalent is to employ the identical classic base, fluted shaft, scroll and cap and the copy must be complete, whether it be Doric, Ionic or Corinthian. One would naturally assume from such evidences of imitation that architecture had reached a state of perfection not to be changed or altered by any succeeding age and that the Greeks and the Romans had said their last word pertaining to art development. On reflection, one is convinced that this position is absolutely erroneous. The Greeks themselves were of all peoples the most progressive. Witness for instance the rapid change from the rigid outline of the massive Doric style to the freedom, grace and buoyancy of the Corinthian. There is no greater evidence of versatility found in the history and progress of art. In view of this wonderful advancement may we not assume that if the old Greek could have beheld centuries later the lofty proportions of the noble gothic structures with their flying buttresses, vaulted roofs and towering spires, they would have congratulated the creators of this mysteriously beautiful architecture. Though absolutely removed from the realms of their classic ideals would they have failed to appreciate the efforts of a strong and self-reliant people, albeit semi-barbaric, who had thus given individual expression to aspirations all their own?



STABLE OF MR. JOHN FARSON.
Oak Park, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

It is contended by a certain few that specified examples of architecture erected in this country during the last decade are strongly American in style; notable among the buildings mentioned are the Boston Public Library, the Library of Columbia University, the Harvard Club, the University Club, the Pennsylvania Railroad Station, the Madison Square Presbyterian Church, and the Gorham Manufacturing Company's Building.

We would in no wise depreciate or pass judgment upon these noble edifices

in which the grandeur of the past is so illustriously brought before the eye. The materials employed are costly and beautiful, the proportions classical to a degree and the modeling so Greek or Roman that while viewing them one might easily imagine oneself to be in some ancient city of Europe. The truth in regard to the style of these respective buildings is manifest; they do not in the least represent an American art or civilization, but are pure and noble types for museum reference. It would be folly at this time to make a just comparison between the relative merits of the classic and a modern school of architecture. No one for a moment imagines the modern day creations yet rival in beauty these costly monuments, or that any effort yet put forth is wholly worthy to represent the architecture of America. However, the efforts evolving from heart and mind of the artist who is striving to depict his day and generation is of ultimate value to posterity. Time alone must be the arbitrator in this momentous discussion. Posterity will utter the final word either of approval or disapproval.

The illustrations accompanying this article are shown not as examples representative of the work produced in the middle west, but rather as illustrations of individual effort, since an indigenous art is not yet recognized in this country. These buildings are in the main designed on the motif rhythm theory. The fundamental principle being to receive the dominant inspiration from the patron, taking into strict account his needs, his temperament, and environment, influenced by local color and atmosphere in surrounding flora and nature. With these vital inspirations at hand, the design naturally crystallizes and motifs appear which being consistently utilized will make each object, whether it be of construction, furniture or decoration, related. The edifice then not only reflects the life of the occupant, but becomes an intelligible creation with character and originality combined. This theory when applied with an open mind is susceptible to the most far-reaching and beautiful results, infinitely beyond anything thus far attempted.

George W. Maher.



RESIDENCE OF MR. HARRY RUBENS.
Glencoe, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

What Is Indigenous Architecture?

The foregoing plea of Mr. Geo. Maher for an "indigenous" American architecture raises so many questions of fundamental interest that we do not like to let it pass entirely without comment. The most important question it raises concerns the intellectual attitude which the American architect should assume towards his own work. Should he consciously seek to make his buildings a translation more or less adapted to American conditions of the traditional European technical methods and architectural forms? Or should he consciously seek to break away from the traditional forms and design buildings which are, as Mr. Maher puts it, "indigenous"—the product of the American social and intellectual point of view and of the American physical facts? The necessity of making this choice may not weigh very heavily upon the majority of American architects; but consciously or not, the attitude which they adopt thereto determines to a very considerable extent the character, if not the value of their work. His intellectual environment forbids an American architect the privilege of designing in a wholly innocent manner, as did the architects in the greatest periods of architectural design. He is obliged to make a choice between the acceptance of the more or less traditional or the more or less revolutionary point of view, and even if the choice is made, as it usually is, for instinctive or accidental reasons, the man's work is thereafter profoundly influenced by the logic of the choice. The



RESIDENCE OF MR. HARRY RUBENS—HALL.

Glencoe, Ill. Geo. W. Maher, Architect.

The motif flower in this house is the Hollyhock, which appears with other geometrical motifs in Ironwork, Piers, Roofs, Gas Fixtures, Art Glass, Stairs, Mantels, etc.
(Photo by Henry Fuermann.)

architect who accepts the traditions usually becomes bound by the traditions very much more, perhaps, than he intended, and the man who rejects the traditions is usually carried by the spirit of revolt much further than he should be. They take, that is, a decisive attitude towards a question which cannot in justice to the whole situation be answered in an entirely decisive manner; and American architecture will improve just in proportion they express a genuine American social and intellectual need.

The mistake, which Mr. Maher and others make, is that of drawing too sharp a contrast between the past and the present in architecture, or (if you please) between architecture in Europe and architecture in America. Intellectually and socially our own country has never been as independent either of Europe or of the past as Mr. Maher's argument im-



RESIDENCE OF MR. HARRY RUBENS—DINING ROOM.
Glencoe, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

as the American architect ceases to adopt, either on one side or the other, the position of an extremist. American architecture, that is, will improve just in proportion as the men who accept the traditions seek to modify them in every practicable manner in order to adapt them to local conditions; and it will also improve just in proportion as the men who seek an "indigenous" architecture hold to the traditional methods and forms, wherever plies. We occupy, it is true, a separate continent with certain special physical characteristics. It is also true that we seek to be an uncompromisingly democratic nation, and that in this respect also we seem to be sharply divided from Europe. But the mere physical division is unimportant, so long as our countrymen have not won their intellectual independence; and a century or more of political independence has not emancipated Amer-

ican thought. During that whole century American intellectual and social habits have merely been an echo of European intellectual and social habits. Neither does a mere declaration of independence, such as Walt Whitman declared in poetry or such as Mr. Maher and others would declare in architecture—neither does a declaration of independence achieve the desired result merely by the force of words. Walt Whitman, in spite



RESIDENCE OF MR. HARRY RUBENS—LIBRARY.
Glencoe, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

of the fact that he raised on high the banner of "indigenous" poetry, always remained in his own country an intellectual exotic. Just because he has had no precursors, he gathered no really valuable following. His poetry remains, not a song of the American democracy, but a song of himself. American intellectual independence can only be gradually achieved. If must be the result, not of the defiance of precedent, but of the slow accumulation of a new set of precedents. We need emancipation, not so much in respect of Europe, as in respect to the moral cowardice of our intellectual and social past. A man who appreciates the need of emancipation does ill to make it equivalent to the assertion of the American against the European point of view. American, of course anybody of local thought and art must be; but it must be American in a new sense. And the new America can only be slowly and cautiously constructed out of the materials afforded by the American past and present.

In a very real meaning of that word our country already has an "indigenous" architecture. It is not indigenous in Mr. Maher's eyes, because in many respects it is profoundly and tamely traditional, but its traditional characteristics are a genuine expression of the intellectual and

social point of view of the average well-to-do American. The American gets what he wants and what he can understand in architecture, as in literature and the drama. It is too bad that he does not want something different and better, but it is no use producing plays that are never heard, books that are not read or houses which their owners do not like. An architect of Mr. Maher's opinions may sometimes find a client who likes Mr. Maher's version of the "indigenous" house, but when Mr. Maher imagines that in such houses he is expressing the "needs, the temperament and the environment" of his client he is mistaken. What he is really expressing are his own needs and temperament, which he has succeeded in imposing on his client. The client, in case he had failed to meet Mr. Maher, would have had his needs and temperament just as well expressed in an ordinary Colonial house. It is because the majority of the most popular and best architects in the East sedulously conform to the needs and the temperaments of their clients that so much of our good domestic architecture is so bad. These clients usually wish their houses to be a combination between a baronial hall and a museum to hold the spoils of their financial and industrial conquests. They want the effect to be good in the traditional sense, but they also want it to be big and bold and stunning and redundant. The architect who designs this sort of thing is at least compromising his own technical and intellectual needs in order to supply those of his client. In the Middle West the state of mind which is too big and overflowing for anything but a baronial hall is not so frequent as it is in the East. The successful Western business man is usually satisfied with something simpler and more genuinely domestic, but it is not anything less traditional. If his own ideas exclusively are consulted, the result is Colonial, Elizabethan or Jacobean; if he consents to a house whose design seeks to be something other or more than traditional, that is only because he has come to place confidence in his architect. It is not to be expected that the prosperous American business man and his wife, for whom the ordinary dwelling is constructed, will have original or edifying ideas about his residence. His house will figure in his own mind as in the first place a convenient and healthy domicile; and in the second place as a structure which appeals to familiar associations. If such dwellings are to obtain distinction and originality, these qualities must derive from the ability of the architect at once to satisfy his client's practical needs and at



RESIDENCE OF MR. JAMES A. PATTEN—FRONT.
Evanston, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

the same time to impose his own technical standards and (perhaps) his own personal ideas. The improvement of American domestic architecture depends, that is, absolutely upon the increasing authority of the architect with his client—upon the ability of the architect to obtain in disputed cases his own way.

The ability of the architect to obtain his own way will in its turn depend upon the use he makes of the authority he has already obtained. If he uses his authority merely to spend as much of his clients' money as he can upon a gilded copy of a French château or an Italian palace, he will at the present time be doing comparatively little for the improvement of American domestic architecture. Time was when such copies, if rendered in a scholarly manner, were by way of being an advance; but now we have had enough of them. They express superseded standards. On the other hand, the architect who uses his authority merely to impose upon his client houses, which so far as possible violate precedent, and which are divorced wholly from the popular associations connected with domestic architecture—such an architect also is pursuing a course which in the long run will diminish the prestige of his professional brethren with their clients. American architecture must not stand still, but it cannot travel too fast. It cannot be wrenched away from its own immediate precedents in this violent fashion. It must advance from the good use of familiar forms to their better use, always keeping in touch with its own past, but always aimed at a better future. A domestic architecture of this kind would be really indigenous. It would be adapted to the prevalent American intellectual and aesthetic standards, whereas the attempt to popularize all at once revolutionary standards and forms could produce only exotic results. Such attempts certainly arouse one's intellectual sympathies. The independence and courage they exhibit deserve admiration; and in many instances specific buildings designed in this spirit call for unqualified approval. But this independence and courage are being misapplied. We can prepare in the present for a better future only by fulfilling the better promise of our past. A really edifying and fruitful tradition in American architecture cannot be founded by a cultivation of the spirit merely of revolt. At bottom it is a profoundly individualistic point of view, which vitiates Mr. Maher's plea for an "indigenous" architecture. Architecture always has been and always must be an essentially social expression, and the fact that the American nation is a democracy does not diminish but rather increases the social ties and responsibilities of the artist and the man of letters as well as of the politician..

The architect who uses his professional authority to the best advantage belongs, consequently, as we have intimated, to one of two classes. He will be a man who has thoroughly mastered the historical traditions and the proper technique of his art, but who is at the same time honestly and intelligently desirous of giving them a local expression. Or he may be, if you please, a man who resents the power of mere tradition in all American intellectual matters, but who understands that in his practice as an architect it is better for him to accept traditions and methods of which he does not wholly approve, rather than attempt to get on without their steadying influence. With men of the first tendency the emphasis will be placed upon the fulfillment of the tradition; and the modifications will be slipped in as it were by the way, just as the late Stanford White, for instance, steeped though he was in a specific architectural tradition, was often very original in his use of building materials and in his arrangement of French and Italian fabrics and furnishing. With men of the second tendency the emphasis will naturally be upon the free treatment of the traditional forms which they use. They will, indeed, accept these forms for the purpose of bestowing upon them, if possible, a new value, and with this purpose on the top of their minds, they will naturally try many experiments and take many risks, which their more conservative brothers would not consider worth the expense. Nevertheless each of these classes of architects would be contributing to the same ultimate result. They

would be familiarizing the more intelligent American public with architectural forms, different in some respects from those of Europe; and they would in this way be preparing a local architectural tradition which would be both sound and flexible enough to take advantage of every improvement in American æsthetic and social standards.

At the present time the great opportunity for an "indigenous" American architecture (in Mr. Maher's sense) is offered rather by business than domestic buildings. American industrial methods have really been revolutionary. American industrial organization is really a new thing under the sun. These unprecedented achievements in the organization of trade and industry have their appropriate expression, so far as building is concerned, in the huge factory and "skyscraper." Both the proportions and the structure of such buildings demand a wholly original treatment, and in the preparation of such a treatment the architect is hindered rather than aided by the classic precedents. When designing skyscrapers and factories, it would be far better in case the American architect could dispense entirely with his usual architectural stock in trade, but unfortunately such an abstraction is intellectually impossible. As well might one expect the mediæval ecclesiastics, who spoke, thought and wrote in Latin, to become the founders of vigorously vernacular literature. The American architect cannot for the present get away from his Latin and that is why he has made such a failure of the skyscraper; but his Latin is much less of an embarrassment to him in the design of domestic buildings. American social and domestic life is not revolutionary, like American business methods and industrial organization. It is a copy, modified, of course, by American conditions, of European domestic and social life; and the American architect, in seeking to give it more of a vernacular character, has found it difficult to find any support for his new language in new social needs or in new moral and intellectual ideas.



STABLE OF MR. JAMES A. PATTEN.
Evanston, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

When we say that American domestic and social life is a reflection of that of Europe, we do not mean, of course, that the reflection is faithful in every detail. The builders of "palatial" residences in and near New York have, of course, tried to copy in the most faithful spirit the social forms and diversions of the European "upper classes," and both the results of this attempt and its futility have been exposed recently with admirable lucidity by Mr. Henry James. There is unquestionably an incongruity between the pomp

and circumstance of the architectural scenery with which these people surround their social lives and the realities of their positions and needs as simple American citizens. The one step which American society has taken in the direction of democracy is in the direction of the complete abolition of distinctions of class as such; and the result of such an abolition is to make the social pretensions of the best New York society wholly absurd. But while class distinctions have been abolished Americans have not in the least abolished or even mitigated a still deeper source of social distinction and misunderstanding—those founded on differences of wealth. The household of the average American business man is organized on precisely the same basis as the household of the average European "bourgeois"; and whatever "indigenous" qualities it may possess certainly do not appear upon the surface. In both cases the possession of a certain amount of money absolutely determines the lives of its possessors, and that is all there is to be said about it. The English merchant of 1750 liked the timid and discreet correctness of the Georgian residences, and the American business man of 1907 naturally likes very much the same sort of thing, because his social and his intellectual outlook is not essentially different.



RESIDENCE OF MR. JAMES A. PATTEN—DINING ROOM.
Evanston, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.
Note the Thistle motif in all carving and ornament.

The abolition of class distinctions in American society has, indeed, been supposed to have one consequence of some importance for the architect of domestic buildings. The European house was built for the member of a class, even when the class to which the man belonged occupied a socially inferior position, whereas the American house is built for an individual. Probably it is this idea

which Mr. Maher has in mind, when he proposes to adapt his designs to the "needs and temperament" of his clients, and surely it is an idea born of illusion and misunderstanding. The house must, indeed, be adapted to the "needs and the temperament" of the owner in the sense which has been explained above. It must, that is, be a house in which the owner can live conveniently, comfortably and without any sense of incongruity. But the notion that a man's "temperament," as distinct from his practical needs and



RESIDENCE OF MR. C. M. ROE.

Kenilworth, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

his intellectual standards, demands expression in American domestic architecture, is one which can hardly be taken seriously. The architect who sought to design "temperamental" houses would have the delicate decision to make as to whose "temperament" the house should express —that of the husband or of the wife; and if he selected the husband he would probably have some difficulty in explaining, say, to a refined and delicate wife his reasons for designing a house in the manner which would express the temperament of her somewhat aggressive husband. The only way in which a man's "temperament" can obtain legitimate expression in the original design of a building turns upon the amount of money which he will spend. Some men willingly appropriate all the money they can afford for the purpose of doing justice to the design of their architects. Other men, who could just as well afford to be liberal, regard the architect as a contractor who has agreed to supply them with so many rooms for so much money. Such a difference in temperament will be expressed in the appearance of a house, whether an architect seeks it or not; but beyond that the one way to obtain a "temperamental" quality in American domestic architecture will be to pass a law forcing every man to be his own architect.

What the design of American houses needs is not temperament, but style; and style is the characteristic which every intelligent architect should seek to give his buildings. Just what "style" in architecture may be is not easy to define, and we shall not in this connection seek

to define it, but at all events it is a characteristic which appeals to a number of people rather than to one. It appeals to the aesthetic common sense of men. It means something more than individuality, because there is nothing arbitrary or merely prankish about it; but it is entirely consistent with the utmost vivacity of feeling. It cannot be achieved save by a most thorough mastery of an architect's technical resources, but neither can it be achieved merely by such a mastery. The union of beauty with propriety which it implies can be obtained only by a touch of imagination. In its absence domestic architecture can have no permanent value and can make no permanent appeal. The house that is designed to suit the merely individual traits either of an architect or an owner will not in its interest outlast the life of the individual. The owner during his life will have every right to stamp on his house the characteristic marks of his own manner of life and taste; but the architect cannot and should not provide either for or against such effects of subsequent habitation. The architect must merely recognize that the taste and life of the owner may either confirm or impair the value of his work. In any event all that he can do is to give that work its maximum value by making it the completely formed product of all the conditions which have any right to be considered.



RESIDENCE OF MR. F. N. CORBIN.
Kenilworth, Ill. (Photo by Henry Fuermann.) Geo. W. Maher, Architect.

H. D. C.

Massachusetts Institute of Technology

Department of Architecture Course of Instruction

The Institute of Technology was the first school in this country to introduce a regular course in Architecture. The course was established in the year 1865, but instruction was not begun until 1866, and the first student was not graduated until 1873.

The curriculum has been planned recognizing that in a profession of as many aspects as that of Architecture, the true function of school training is primarily to inculcate high ideals, and to prepare the foundation upon which the student is to erect his superstructure of architectural capacity. The student's mind must be educated to reason and think clearly and logically. His sense of beauty must be trained and cultivated. His imagination stimulated, his point of view made flexible, and his skill in expression in the mediums of the profession cultivated. He must be made to see that architecture is essentially a fine art, and that its practice must be based on his possession of a broad general cultivation and a liberal training in design founded on the principles underlying sound construction. All this can only start him in the right way, but it is the essential training for the student who is to become an intelligent architect.

At the beginning the spirit of instruction was based on that of the Ecole des Beaux-Arts at Paris. The wisdom of this has been amply justified by the results obtained during past years, and by the present status of architectural education in this country. Since the beginning the general plan of instruction has been changed only by developing the older courses and by adding others to meet the new conditions arising in modern practice. The instruction is both general and special. The facilities of the school as regards instruction staff and equipment are such as to permit of individual instruction to the greatest extent.

To be entitled to the degree of the Institute, Bachelor of Science, the student must have completed all the prescribed studies and exercises of the four years' course, and also an original thesis design accompanied by an explanatory memoir. About half the second term of the fourth year is devoted to the preparation of this thesis.

The strong position which cultural subjects hold in the curriculum may be shown best by the subjects under this heading, in which the candidates for regular admission to the Institute must pass a satisfactory examination, and also the subjects of this element of general training as continued through the entire four years course.

Entrance examinations are held in elementary French and German. In English the test is, as far as possible, the candidate's ability to express himself in writing clearly and accurately, and of his power to distinguish, in a broad sense, literary values, the qualities which mark a work as literature. He is required to have some acquaintance with good literature, and the examination is intended as a proof rather of his power of intelligent appreciation than of his knowledge of special books. In History he must have a thorough acquaintance with the history of the Thirteen Colonies and of the United States up to the present time, together with an elementary knowledge of its government. Or, instead, the requirement covers the history of Greece and Rome to the fall of the Roman Empire in the West.

The applicant must also present satisfactory evidence of preparation in one of the following electives:

Additional French or German, Latin, Additional English, Additional History, Chemistry, Mechanical Drawing and Mechanic Arts, Biology.

The object of these elective requirements is to secure and recognize greater breadth of preparatory training.

During the first year French is a regular study, as well as rhetoric and English composition, and a half-year is given

to the history and government of the United States.

During the entire second year German is a regular study. English literature and composition are continued, and a half-year of European history is added.

All students who are candidates for the degree of the Institute (except college graduates) are required to complete a prescribed course of reading of a non-professional character during the summer vacations following the first and second school years. The purpose of these courses is to increase the acquaintance of the student with literature, history and general science; to develop in him a taste for such reading, and to impress him with the importance of general culture, not only as a source of individual enjoyment, but as a practical aid to professional men in their social and business relations.

The regular students in the third year are required to devote one hundred and twenty hours during the two terms to elective work in general studies, with entire freedom in choice of subjects from a carefully prepared list of options in economics, English, modern languages and history. Besides this, there are half-year courses in political economy and business law. The remaining subjects for entrance examination are physics, mathematics, algebra and plane and solid geometry.

The first year is mainly devoted to preparation in technical and cultural subjects so that the work of after years may proceed at the greatest strides. Professional work begins with free hand drawing, which is continued through the four years. Students study from the cast of the antique, from architectural detail and from life, with individual instruction. The drawing exercises are supplemented by lectures on art anatomy and memory drawing. In the graduate year decorative figure design takes the prominent position belonging to it when associated with architecture in its highest development, and is studied in its varied relation to painting and sculpture. Besides the large and well-equipped drawing-rooms of the Institute, the Museum of Fine Arts offers excellent opportunities for drawing from the cast, and regular exercises are held in its galleries.

The courses in free hand drawing are supplemented by others in water color, pen and pencil, composition and rendering and modelling. In water color, which lasts through one year, the purpose is to give a good knowledge of the use of brush and color, primarily with a view to architectural rendering. The instruction begins with study from still life in the studio. As the work progresses opportunity is given for out-of-door sketching, and during the summer vacations students are expected to make sketches to present for criticism when the next term opens.

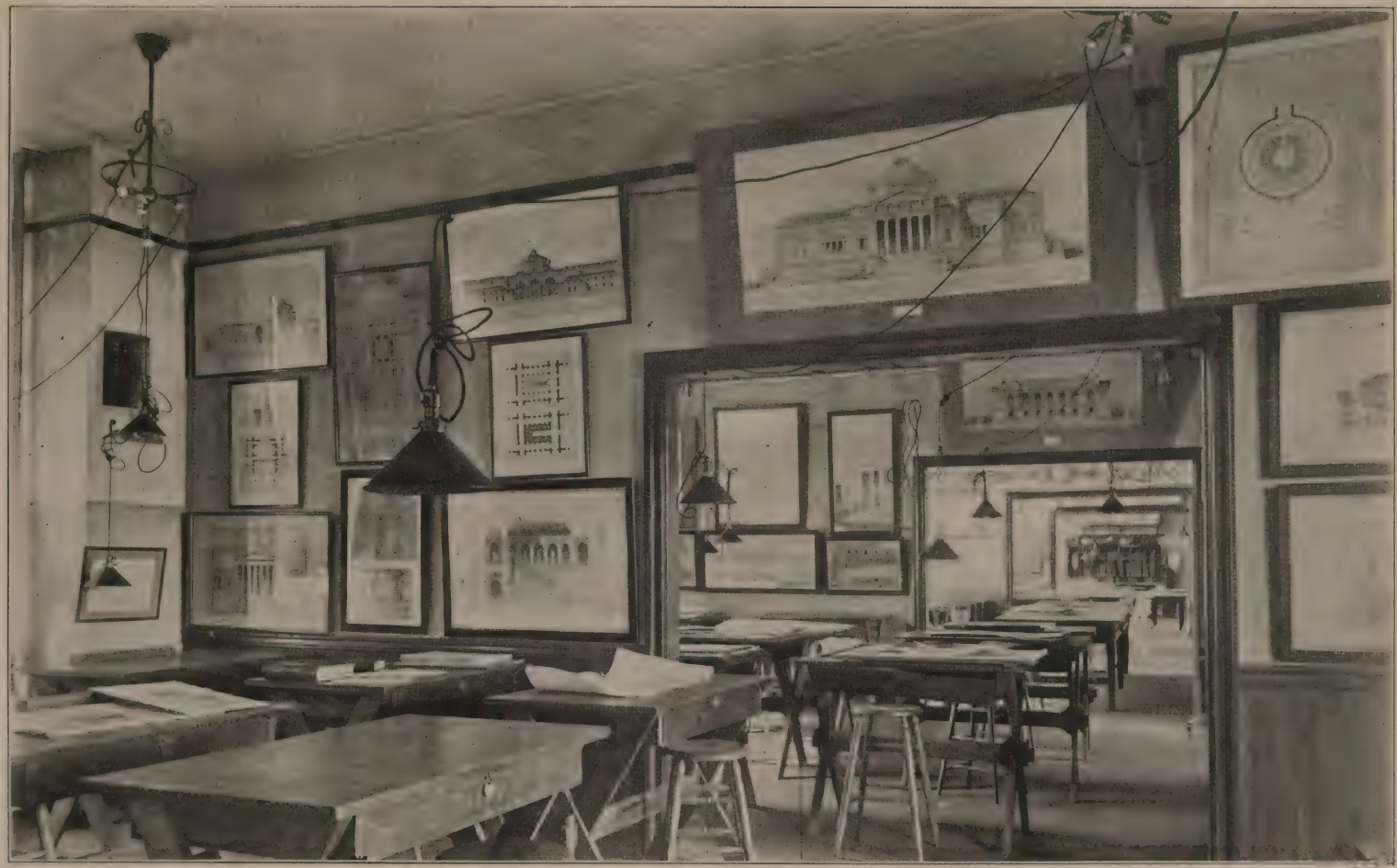
In pen and pencil, which lasts through one year and a half, the purpose is to ensure facility in rendering architectural subjects in both these mediums. Individual instruction is given in one-hour periods, and each week the work of the previous one is criticized before the class.

Composition and rendering, which lasts through one year, is elective in the regular course, but a regular study in the graduate year.

Modelling lasts through one year, with the purpose of teaching the student the value of the third dimension, which he needs to recognize for the proper understanding of architectural detail. He is taught the manipulation of clay and its practical use as an aid in design.

Design and the history of ancient architecture are taken up simultaneously in the second year. The student begins with the study of classic work. It is the logical starting place because in the orders culminated all ancient architecture, and in the orders was the birth of the great styles that developed in later years. It is a study that involves all the fundamental principles of architecture and requires historical knowledge and accuracy. It gives the student a solid training in balance, proportion, light and shade, scale and color. In fact, the study of classic architecture will be of the greatest value to him when he takes up his actual professional work.

The student is made to study and analyze the elements of the best examples



MASSACHUSETTS INSTITUTE OF TECHNOLOGY, ARCHITECTURAL DEPARTMENT—THIRD AND FOURTH YEAR DRAWING ROOM.

of classic work in order to cultivate his taste and sense of proportion. At the same time the fundamental principles of architecture are inculcated, and the influences governing composition are explained and discussed. Lectures are given on the proportion and correct use of the Greek, Roman and Renaissance Orders, arcades, balustrades, windows and other architectural details. A thorough course in shades and shadows is given concurrently with that of the orders, and the student learns that by applying to his drawings the laws of the projections of shadow he indicates in a degree the third dimension, and at the very beginning is made to see the importance of light and shade as a factor in the composition of design.

To familiarize the student with these forms and the value of the third dimension, and to give him the best possible idea of scale, full size models of various orders have been prepared from which measured sketches and accurate drawings are made. Continued practice in drawing and academic rendering affords the training necessary for the hand and eye, and he is thus well started for the subsequent practice in original design, which continues with increasing importance each year until the student graduates.

Lectures are given on the theory of design at frequent intervals. Its practice is in charge of instructors who are actively engaged in their profession. In fact, the main instruction force has always been made up of men either engaged at the time in architectural practice or who have had previous experience sufficient to know that Architecture should be taught as a living, progressive art. This fact, besides, has a great deal to do with the active sympathy and help which has always been extended to the Department by the Boston Society of Architects. The membership in the Society of so many of the instructors has tended to continue from the beginning these close relations, the value of which cannot be overstated.

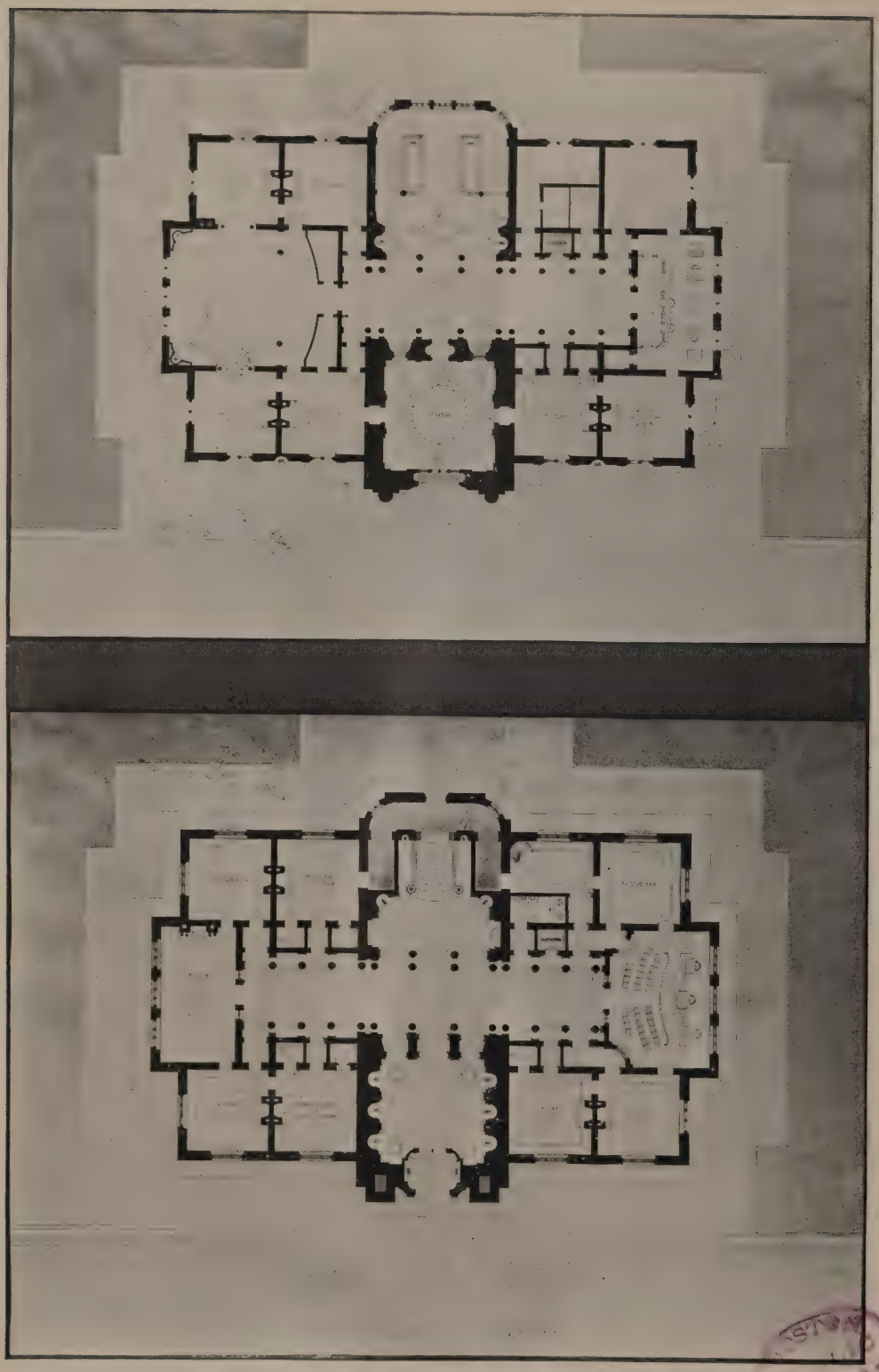
The study of original design is by means of regular problems, and criticism of them before the classes. The problems assigned to each class vary from sketch problems to be designed and rendered in one day "en loge," to the one to be finished in a week, and the more difficult problems, for which an entire month or more is allowed.

In order to accustom the students to concentrate their minds upon the development of a single idea, instead of wasting their energies in the successive adoption and abandonment of different solutions of a given problem, two days are allowed after the posting of the larger problem of the month, within which time each student must fix upon some general scheme for his design, and show his idea by sketch plan and elevation on a small scale. These preliminary sketches are attached to the completed designs, which must correspond with them in all essentials. These sketches are criticized before the class, attention directed to their good and weak points, and while working up the scheme to the finished design the student has regular individual criticisms. At the end of each problem a criticism takes place before the class. Its value is such that no student will willingly miss it, and what is learned through this sizing up of one's work and by its comparison with that of others is the greatest aid in helping one to criticize himself and make the most of his reasoning powers.

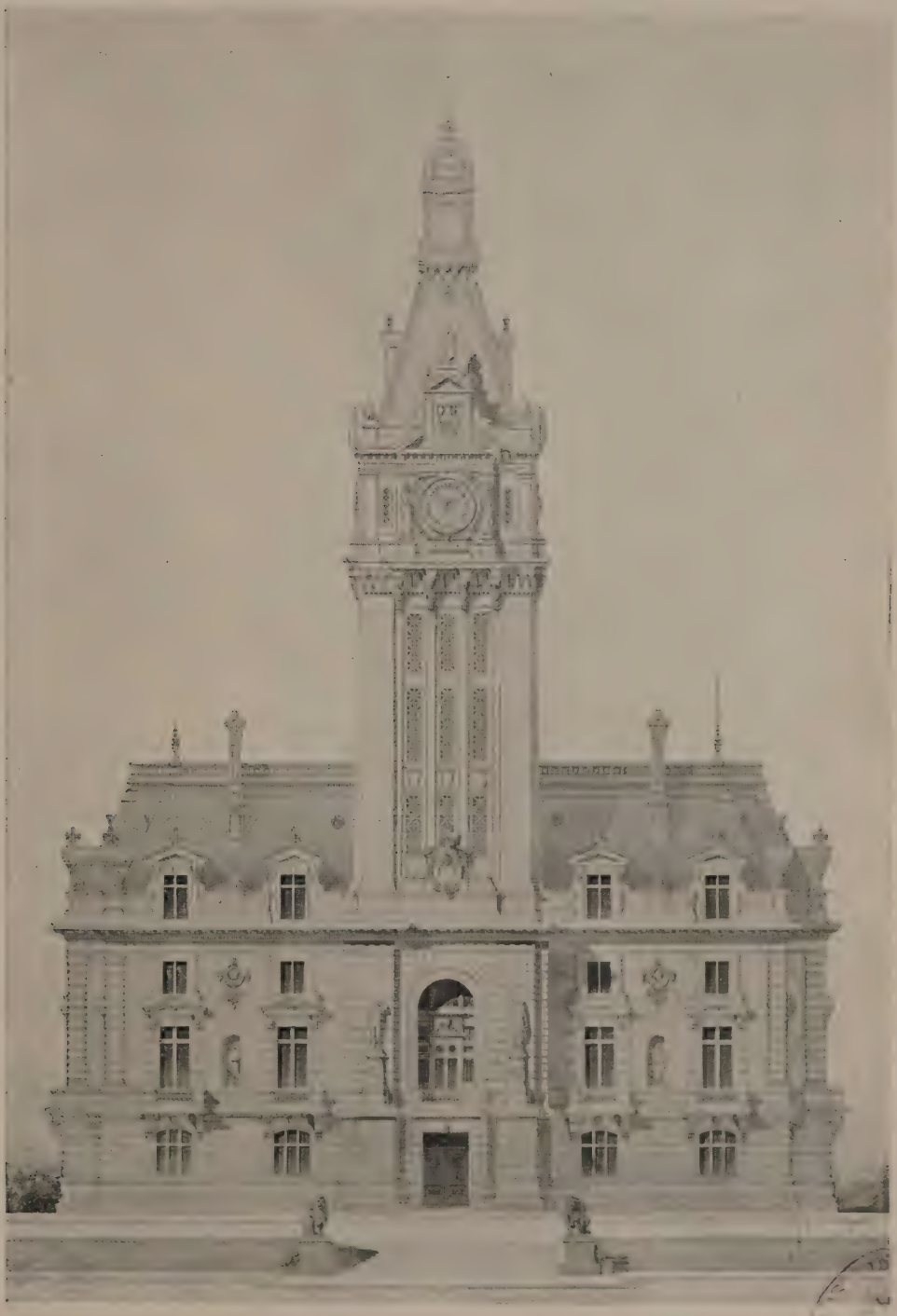
The aim of the course in the History of Architecture is to make the student see that the styles simply represent certain points in the great march of architecture, that they developed naturally and logically in response to social and political conditions as they changed, and to the skilful use of materials in construction. That throughout this great movement construction was recognized as the basis of all good architecture. That the relationship is so close between these architectural periods that in this study not one of them can be slighted if the student is to have an intelligent understanding of the great monuments designed by former architects. This history is taught by lectures amply illustrated with the stereopticon, and by books and photographs. Each week the students are required to present for criti-



MASSACHUSETTS INSTITUTE OF TECHNOLOGY, ARCHITECTURAL DEPARTMENT—STUDIO LIFE CLASS.



A CITY HALL. BY F. N. EMERSON.



A CITY HALL. BY F. N. EMERSON.

cism abstracts and sketches of the historical monuments discussed. They are also required to test, by comparison with the works themselves, the descriptions and conclusions of the leading architectural authorities, and to prepare careful themes and drawings showing the results of their research. This personal investigation serves, besides, to give the students a good working acquaintance with the exceedingly valuable collection of books and photographs belonging to the department, and stimulates their appreciation of the best architectural works. The History of Architecture is completed in the third year, and is followed by a year's course in the History of European Civilization and Art, in recognition of the broadest aesthetic and historical training. The course gives an extended survey of political, ecclesiastical and social history, which is as necessary as architectural history in itself, if the essential spirit of Classical, Gothic and Renaissance art is to be fully grasped. The ages of highest achievement, moreover, have been also the ages of greatest distinction in sculpture and painting, arts which of necessity stand in a close practical relation to that of building. With these considerations in view, a course of study has been planned which aims at giving a general review of the history and characteristics of European civilization in the Classical, Gothic and Renaissance ages, and at familiarizing the student with their sculpture and painting. This course is illustrated in the fullest possible manner by lantern slides, of which in sculpture and painting the department has a collection of over two thousand subjects, and by a large number of specially prepared wall maps. Supplementing the work of the class-room, sets of photographs, well labeled for study, are exhibited in the architectural library, the collection being changed from time to time to keep pace with the work of the class. Ample provision has been made for books of reference and for collateral reading, of which a considerable amount is required of every student.

The extensive collections of the Museum of Fine Arts and the Boston Public Library, with its conveniently arranged art department, are both close at hand, and form a most valuable supplement to the resources of the Institute. Taken together, the facilities offered for a liberal aesthetic as well as practical training are such as few universities can rival.

Instruction in Ornament explains the historical development of ornament, and teaches facility in the general treatment of color in decoration, as well as the characteristics of different styles. Lectures are given, the problems are designed and rendered in color, and when finished are carefully criticized before the class.

Scientific construction is continually becoming a more necessary part of the architect's profession. His knowledge must be broad and thorough, and the practice of to-day shows that an architect should not only be a skilled artist, but should also be scientifically trained as to control intelligently all constructive questions.

The mathematical courses in Algebra, Plane Trigonometry, Analytic Geometry and Calculus, and the course in Physics prepare the way for the consideration of professional work in Applied Mechanics, Graphical Statics, and Strength of Materials. These are followed in turn by a short course in Constructive Design, which applies the knowledge obtained in earlier courses to problems often encountered in modern architectural practice.

In the third year the principles involved in different methods of Perspective and the simpler problems of Stereotomy are taught. In the latter course the methods of Descriptive Geometry, learned in the first year, are applied to the drawing of practical problems in stone cutting.

The study of Working Drawings and Specifications includes practical instruction in making quarter-scale plans and elevations from sketches of wood, brick and stone constructions, and in making the framing plans and working drawings of various kinds necessary in actual practice. Specifications are discussed, and the various materials used in modern



A MUSEUM OF WAR. BY L. E. KERN.

construction are described, such as cement, lime, mortar, brick, wood, stone, metals, etc., and their use by the mason, carpenter, roofer and plumber. Care is taken not to attempt details which may be better learned in an architect's office, but enough is accomplished to enable the student to take immediate advantage of office opportunities upon graduation.

The student is advised to spend a part of the summer in an architect's office. What he learns of office practice in this way during the vacations of his course is a great aid to him in the clearer understanding of his school work.

The course in Building Stones is specially designed to meet the needs of the students of architecture. The principal varieties of stones used for building and decoration are described and discussed with the aid of numerous dressed specimens, especial stress being laid on the distinguishing features, adaptation to use in various situations, strength and durability, occurrence and distribution and important instances of use. This work is followed by illustrated lectures on the methods of quarrying and dressing, the weathering and climatic relations and the selection and testing of stones. Excursions are made to granite and other quarries in the vicinity of Boston. This course is adapted to the needs of students who have done no previous work in geology.

The course in Heating and Ventilation is planned to acquaint the student with the fundamental principles of the subject, and the proper application of these principles to practice in the solution of a considerable range of problems in this field of engineering. The practical side of the subject is treated with as much thoroughness and fullness as is consistent with the primal aim of the course.

ARCHITECTURAL ENGINEERING

In recent years opportunity for specialization has been offered by the introduction of options in Architectural Engineering and Landscape Architecture for students not desiring to follow the general course in architecture. The option in architectural engineering meets the demand for men specially trained in the computation of all the details of modern steel construction which occur in the practice of architecture. It diverges from the other options at the middle of the third year, the general architectural training which the student has had during his first years being an important aid to him in his future career. His field of employment will be broader for this knowledge, for, as an architectural draughtsman his familiarity with the uses to which a building is to be put and his ability to take part in the regular routine of the architect's office, will make his services additionally valuable.

Lectures and problems on the principles of Applied Mechanics and lectures in the Theory of Structures, including loads and reactions, shears and moments, proportioning of beams, columns and tension pieces, the computation of plate and box girders, wooden and steel roof trusses, steel framing, wind-bracing, fireproofing, foundations, arches, etc., give the necessary preparation for practical problems in Structural Design, which forms the important feature of this course. In the fourth year a part of the time is given to laboratory tests on the strength of building materials.

Graduate students who have completed the regular course in architecture will find in the engineering option an attractive field of work.

SUMMER WORK.

Besides the regular work, the course of the department also offers in certain subjects summer instruction covering the same ground and given in the same manner as that of the regular classes. The courses are given by members of the department during July and August, and the subjects included are Second and Third-Year Design and Shades and Shadows. Courses are also available in Mechanical Drawing and Descriptive Geometry, and in the Modern Languages. For those who have had some previous training in these subjects there



A CLUB HOUSE ENTRANCE. BY I. P. LORD.

are also courses in Physics and Mathematics.

While these courses enable students who have incurred deficiencies during the school year to make them up before the next term, their principal object is to assist applicants for advanced standing, particularly students coming from other colleges, to complete the preliminary work of the second year, with a view to undertaking third-year work to better advantage, or even to give them the opportunity to complete the professional work in two years.

In addition to this summer instruction, a summer school is held whenever a class is large enough to warrant, for the purpose of bringing the students in contact with the practical side of building, and that they may learn to appreciate the true value of scale and detail. For this purpose localities are visited where buildings are to be found which are important as representative of style or character. These buildings are thoroughly studied, measured and photographed, careful sketches are drawn, and later complete drawings are worked out to scale.

The first summer school was held in 1893, in Chicago, during the World's Fair. In the following years schools were held in Salem, Mass., and Portsmouth, N. H., for the study of Colonial Architecture. The drawings made in these years have been published in the "Georgian Period," Part VII. In 1896 the Institute took the important initiative of sending the school to Europe, and a bicycle tour was made in England and France for the study of architectural styles. Next, the school made pencil and water-color sketches of the picturesque buildings in and about Quebec. After this the school again studied European Architecture, visiting cities in Northern Italy between Genoa and Venice and then made a successful bicycle tour to Paris for the study of the buildings of the Riviera, the Rhone Valley and the central part of France. Measured drawings were made at Venice and Arles, and sketches were made in most of the towns visited. Over 700 negatives were taken with hand cameras of important details, interesting buildings and local scenes, and the successful pictures were added to the library collections of photographs and lantern slides. Again the school returned to the study of Colonial work, making many measured drawings at Providence and Boston, and the last one spent four months in France and Italy.

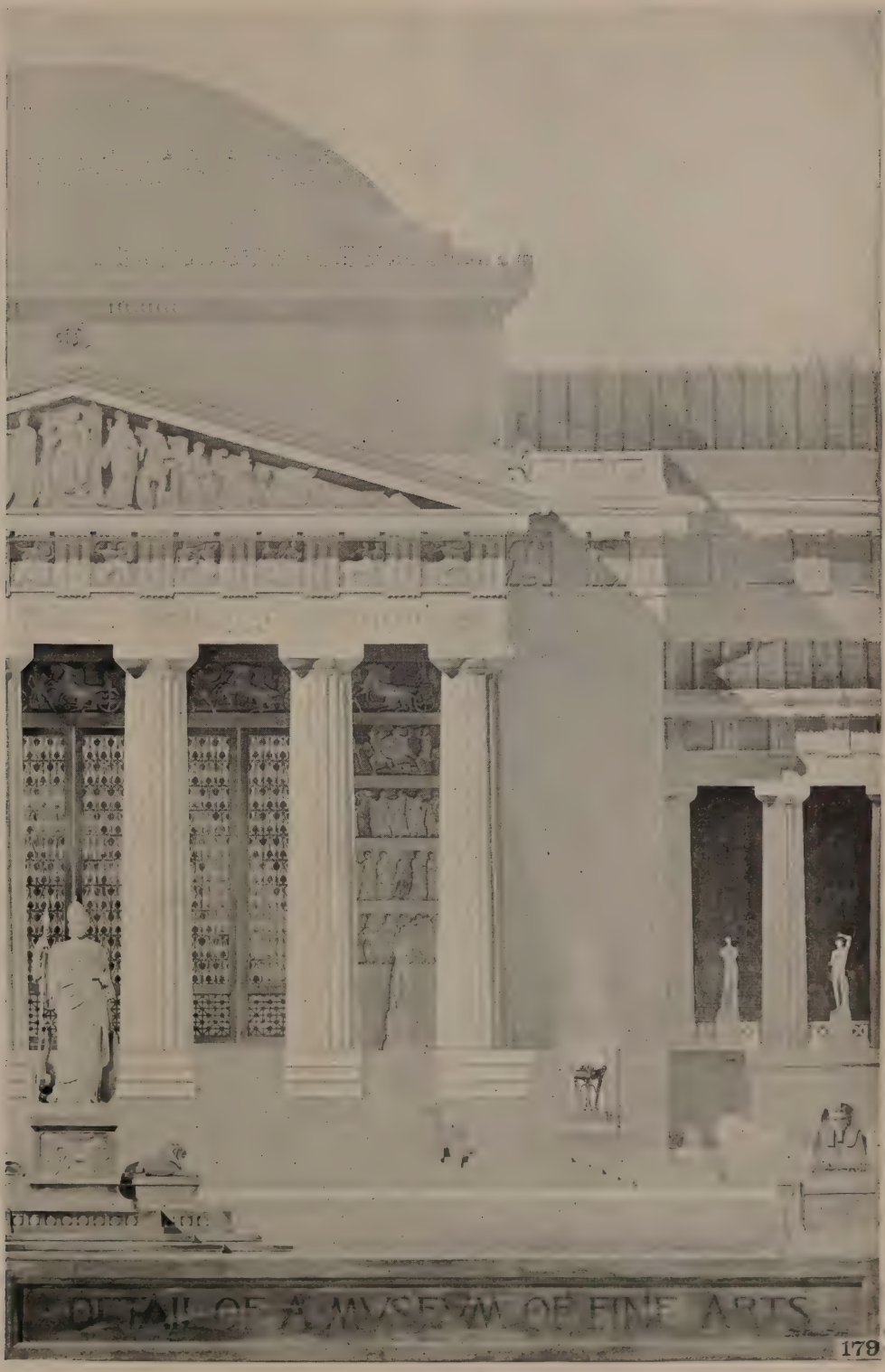
GRADUATE WORK.

The Institute offers, moreover, opportunities for one or two graduate years of advanced study, to be spent entirely in professional work. The value of such a course cannot be overestimated, for it allows uninterrupted and continuous study at the time when the students are exactly ripe for it. Such conditions are conducive to special effort, and the stride made from the very beginning of the fifth year is always surprising.

SPECIAL STUDENTS.

Persons applying for admission as special students in Architecture must be college graduates, or twenty-one years of age, with not less than two years' office experience. They will be required to pass, before entrance, examinations in Plane and Solid Geometry, and must include in their work at the Institute the regular first-year courses in Free Hand Drawing, Descriptive Geometry and Mechanical Drawing unless these subjects have been passed at a previous examination.

Graduates of colleges are admitted without the usual entrance examination, and will be permitted to enter any of the courses at such a point as their previous range of studies will allow. If prepared to enter upon most of the studies of a certain year, they may often be afforded opportunity to make up any studies of the earlier years in which they are deficient. They will, in general, be credited with all subjects in earlier or later years in which they can show, by examination or otherwise, a standing satisfactory to the Faculty, and may be received provisionally as regular students, subject to making up deficiencies in work of previous years within a limited time.



DETAIL OF A MUSEUM OF FINE ARTS. BY O. FAELTON.

Applicants presenting satisfactory certificates for work done at other colleges may be excused provisionally from taking the corresponding examinations at the Institute. Applicants for advanced standing should present themselves for examination (except in the case of those offering certified records from other colleges in this subject), and all applicants should submit drawings covering the above ground as fully as possible. In case these drawings are not satisfactory, further work and examination may be required.

PRIZES.

The department is fortunate in the active interest taken in it by the Boston Society of Architects. At the Society's annual meeting for choice of officers the appointment of a committee to visit the department is always made part of the regular routine, and the good precedent established as long ago as 1868 is regularly followed in offering two prizes of the value of $50 each in books for the best solutions of a special problem in design, to be made by the fourth-year regular and the fourth-year special students.

The two Rotch prizes of $200 each are given according to the will of the late Mr. Arthur Rotch, a former student and lecturer; one to the student who has graduated with the highest standing in the regular course in architecture, and the other to the special student who ranks highest at the end of a two years' course. For the latter prize only those applicants are eligible who enter in accordance with the requirements, on the basis of professional office experience or as college graduates.

SCHOLARSHIPS.

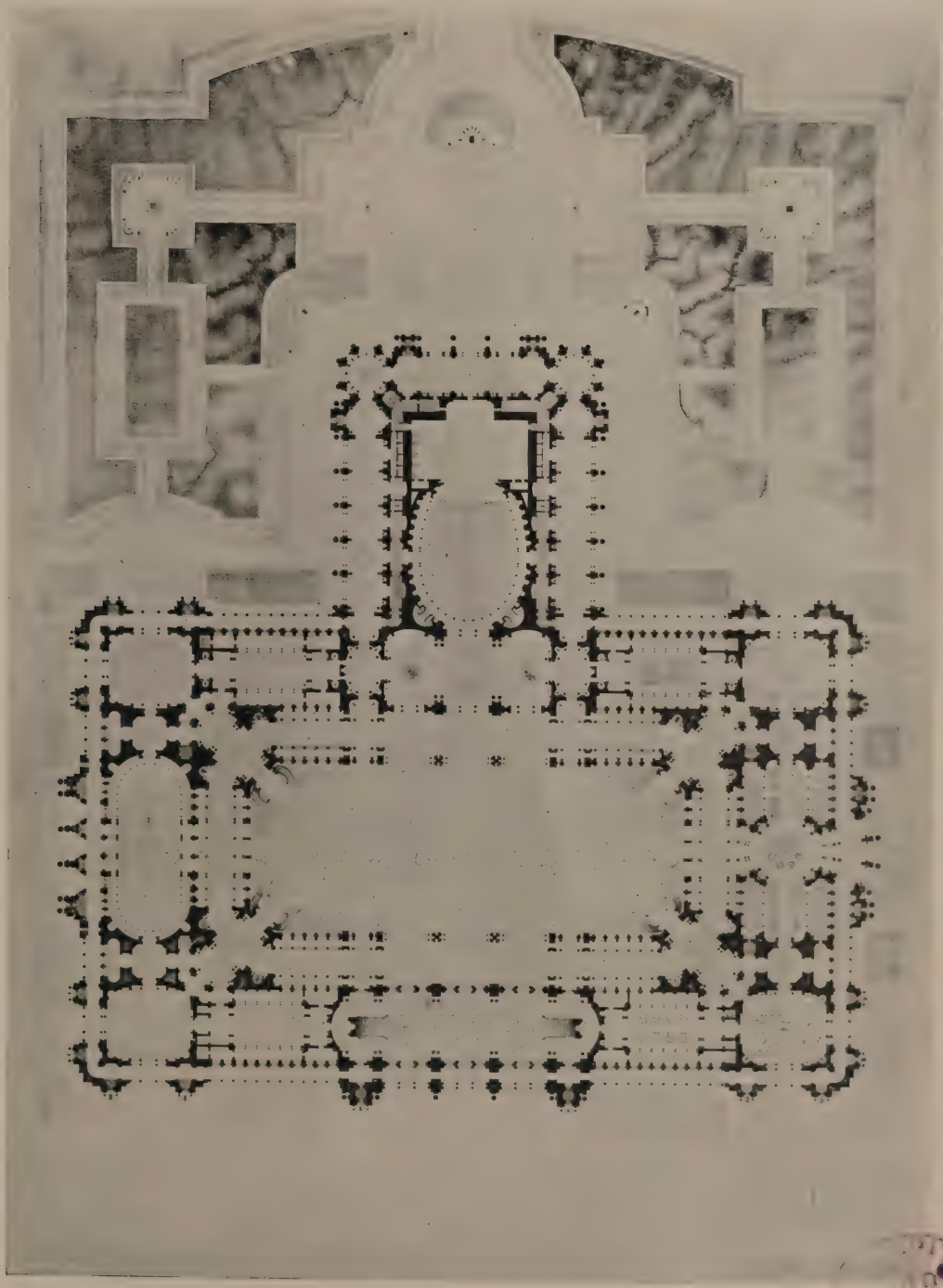
The resources of the Institute for undergraduate scholarships have been largely increased by recent benefactions. In regard to the application for these funds, and also for those of graduate scholarships and fellowships, the catalogue of the Institute should be consulted; but it may be said here that preference is given in making awards to applicants who have completed at least a year of thoroughly satisfactory work at the Institute.

The special legacy of the late W. B. Perkins and the general income of the Austin Fund for aiding students and teachers enable the Institute to make adequate provision for graduate traveling fellowships in architecture.

The annual Traveling Scholarship amounts to $1,200. The award is made solely on the basis of distinguished merit, as it is felt that the prize will thus possess a greater value for the advancement of architecture than if restricted to benefit only the regular or the needy student. Candidates, therefore, will be received from both regular and special students, but they must have passed two consecutive years in the department within the last three years, and at least one of the years must have been in the graduate class. They must, besides, have proved themselves during these school years to have been earnest students and of first-rate ability.

THE BUILDING.

For the third time since 1883, the department has had to change its location to meet the constant need of expansion. The present quarters in the Henry L. Pierce building gave at the time opportunity for increased accommodation, but the need of more space is again being felt. The library is very fully equipped and catalogued, and has every convenience for consultation of its 3,800 books, 16,000 photographs, 48 serial publications and 15,000 lantern slides. By means of a special fund raised for the purpose, several thousand books, photographs, prints, drawings and casts were originally collected for the department. To these collections large additions have been made by regular appropriations and by gifts. The adoption of the alcove system greatly assists in the effective use of books by bringing together works of the same style and subject. The exhibition room gives ample opportunity for the display and comparison of designs and sketches and the continuous exhibition of students' work. This room has associated with it the "loges" in which



PLAN OF A PEOPLE'S PALACE. BY F. W. PUCKEY.

the advanced students are isolated while preparing their twelve-hour sketch problems, and for the annual competition for the $1,200 traveling scholarship.

The arrangement of drawing-room has proved very satisfactory. Bringing together the third, fourth and graduate classes in the way that has been done gives the best results. In putting together between eighty and one hundred men of different degrees of experience and ability, in increasing the "esprit de corps" (which has never been wanting), in giving the younger class the benefit of direct association with older men, we have succeeded in combining in the regular instruction all the best qualities of the French atelier system. The rooms are crowded, but there are no complaints, and the amount of work accomplished leaves nothing to be desired. The large open alcoves into which the great drawing-room is divided is simply for the purpose of giving wall space on which to hang the valuable collection of drawings, prints, photographs and historic casts. So great a part of the education of the architect comes through his eyes that they should have the opportunity to rest on such objects of beauty as we are able to supply. The collections are particularly rich in the choicest work of the Paris "Beaux-Arts." Perhaps the most interesting group is Pascal's competitive drawings for the Hotel de Ville at Paris, a gift from Mr. Pascal himself. Among other drawings of this distinguished architect are those which won for him the Prix de Rome. Then there are the original "Envois de Rome," by such men as Tournaire, Chaussemiche, Recouré, Chifflot, and the drawings of Emanuel Brune, which still stand forth a monument of skilled technique, unrivaled in the architectural world, a library in themselves and a continued source of inspiration.

EXPENSES.

The tuition fee for regular students is $250 per year. For one-half or any less fraction of the school year, the fee is $150. Special students pay, in general, the full fee; but when a few branches only are pursued, and the time required for instruction is limited, application for reduction may be made to the Bursar. The fee for students in the Graduate Course is the same as that for regular students. It is desired that regular students whose financial necessities are such as to prevent their continuance at the Institute, communicate, through the Secretary, with the Scholarship Committee of the Faculty. The exercises of the school are held at such hours as to allow students to live conveniently in any of the nearer cities or towns, on the lines of the various railroads, if they prefer to do so. The cost of board and rooms in Boston and the neighboring cities and towns need not exceed seven or eight dollars a week. The cost of books, drawing instruments, paper, etc., is from twenty-five to thirty-five dollars a year.

F. W. Chandler.

Modern Foundations

No branch of engineering requires greater skill than the design and construction of foundations. The principles are simple, the first being that the supporting layers shall be at right angles, or nearly so, to the line of pressure, and the second that the pressure upon them shall be less than their safe bearing value. All important structures should be started below the frost line and care should be taken to prevent percolation which might undermine the footings. But the application of these principles has to be made under such varied and often difficult conditions as to require in general a new solution for each problem.

A foundation in its broadest sense is defined as "the basis or groundwork of anything." It is therefore both concrete and abstract and is universal. In this article it will be considered as that part of a building from the bottom of the excavation up to the ground surface. Its lower courses are the foundation footings and the material on which the footings rest is the foundation bed. The function of a foundation is to support safely the loads brought upon it by its own weight and that of the superstructure. Safety does not require that no settling shall occur but, if present, it is of the greatest importance that it shall be uniform. Unequal settling is a serious matter, causing excessive strains throughout the structure, producing cracks and other defects and may result in the collapse of the building. As in practice it is usually difficult to obtain uniform settling it is better whenever practicable to make the foundation unyielding. The materials entering into it should be as nearly indestructible as possible. Wood continually wet, brick, concrete, masonry and steel protected from moisture are all used with good results.

The load which a footing will carry depends directly upon its area and the nature of the material on which it rests. Even a poor soil can carry a large structure if the footings are of sufficient width. It is necessary to correct the popular idea that quicksand is some lurking monster that swallows up the unwary. The engineer's definition of quicksand is any loose friable material saturated with water. There are different kinds of quicksand just as there are different kinds of wood, varying from nearly as treacherous as the popular idea of it, to a material that may be safely built upon. The lower end of Manhattan Island is a quicksand extending from the surface to a maximum depth of eighty feet below Broadway. It will bear three tons per square foot and the foundations of many buildings rest upon it. Filled-in ground is one of the poorest materials on which to build, as for years after it has been deposited it will continue to settle and obviously any structure it carries must settle with it.

Ordinary ground will bear safely from two to four tons per square foot, dry clay from four to six tons per square foot, good gravel from six to ten tons and bed rock from fifty to two hundred tons per square foot. Sand if confined will stand very large pressures, and similarly water, the most unsuitable of all, if it could be restrained, would be capable of resisting an enormous pressure. Certainly no force man has produced is sufficient to injure its structure. It is hardly necessary to say that good bed rock is the best available material on which to build and has been so considered since biblical times. The Egyptians apparently gave little attention to their foundations. The compact soil, dry climate and absence of frost simplified the problem. They usually built their temple walls on a footing of stone or sometimes of sun-dried bricks, the bottom courses being five or six feet below the ground surface. While this construction answered in the main, it is

probable that the ruin of some of the great temples was caused by the failure of their foundations, due to the infiltration of the Nile overflow.

The Greeks gave the matter more attention, excavating to a considerable depth and building the footings of fine cut stone carefully laid dry. The Romans excelled all others of their time in their foundations. They excavated usually to rock and built spread footings of cut stone laid in cement. They used concrete extensively and were skilful in

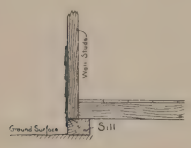


Fig. 1. The primitive foundation consisting of a wooden sill on the ground, with studs and floor beams resting on top.

subaqueous construction, using piles and cofferdams.

The foundations of modern structures may be divided into two classes: 1—those where the work is begun on ground above the water level, as for buildings; 2—those started on ground below the water level, as for bridge piers and light houses. This classification is somewhat arbitrary, as the methods used are often the same in both. The conduct of the work, however, is so different as to seem to justify the division. It is the purpose of this article to consider only those of the first class.

The most primitive form of foundation is shown in Fig. 1. As will be seen, it consists merely of a wooden sill, a piece of timber say six by eight inches in section, laid directly on the ground with the studs, the floor beams resting on top. As the load that such a foundation will carry is limited by the comparatively small area of ground on which it rests, and as it readily rots it should be used only for unimportant or temporary structures.

An improvement on this method is to raise the sill off the ground by putting it on occasional stones, as shown in Fig. 2, materially increasing the life of the sill. A further improvement is to rest the sill on a continuous course of stones increasing the bearing area on the ground. This is the usual construction for barns.

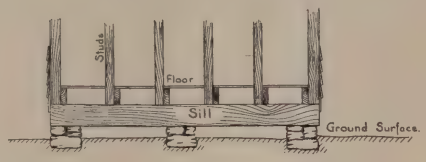


Fig. 2. The transition from the primitive to the dwelling house foundation.

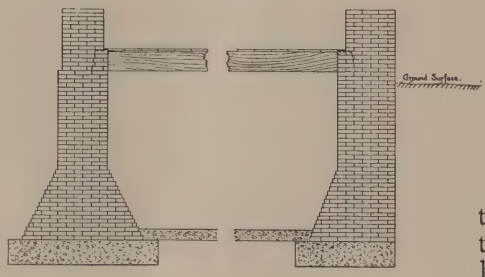


Fig. 4. The two types of spread footings—a development of the dwelling house foundation—suitable for buildings up to seven or eight stories.

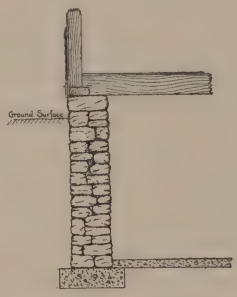


Fig. 3. Typical dwelling house foundation. A wall of rubble masonry.

The next step in the development of the foundation which has been built oftener than any other is that of the ordinary dwelling house, Fig. 3. It is merely a wall, usually of rubble masonry, brick or concrete, 16 inches thick, or more as shown. It is generally started somewhat below the cellar floor and extends above the ground level. For ordinary frame houses the thickness required for the cellar walls usually gives sufficient bearing on the ground; but it is better to start them on a wider footing course. It will be clearly seen that this is a direct development of the shed and barn foundation, the improvement being the solid masonry wall started below the frost line.

For larger buildings where the weight would overload such a foundation a wider footing is obtained by offsetting the foundation walls (Fig. 4), giving a

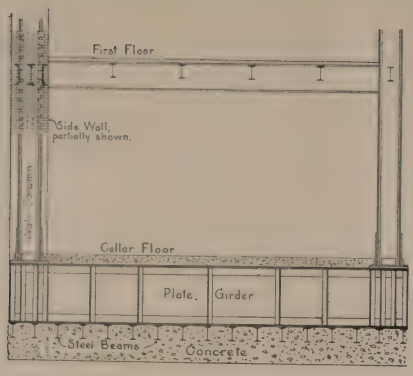


Fig. 5. The steel grillage foundation, designed for a high office building resting on quick sand.

much wider bearing on the ground and proportionately increasing the weight which may be safely carried. This is known as a spread footing, which should not be sloped more than 30 degrees with the vertical. If the offsets may be made equal on both sides any width of footing may be obtained by going deep enough, the only limit being the volume of masonry required. The economical limit of the spread footing when resting on ordinary ground is reached when a building exceeds five to seven stories. If owing to adjoining buildings the wall may be offset only on one side the effective limit of offset is reached when the footing course is about one and one-half times the width of the wall at the nearest tier of beams above, for if it is more than this it will distribute little or no pressure under the toe. This is a fact that has often been overlooked by architects and builders.

An example of this fault was recently found in an eleven-story office building in the lower part of New York City. Its foundation was a spread footing resting on quicksand and owing to an adjoining building one of the foundation walls was offset on only one side. The width of the supported wall was four feet and the width of the footing was more than 10 feet. It was assumed that the pressure would be distributed over the entire footing, but as we have stated above, about four feet of this was ineffective, the pressure on the remaining six feet was proportionally greater, exceeding the bearing value of the sand, and the wall slowly and steadily settled. After a number of years the foundation was reinforced at a cost of nearly $50,000.

The use of steel in building construction has developed a modification of the spread footing by using one or more layers of steel girders or beams, those of each layer being set on and at right angles to those of the layer below, making what is known as a grillage. The steel should be thoroughly protected from moisture and each layer should be embedded in concrete. This type of construction, shown by Fig. 5, and also by the central pier of Fig. 6, has been used to a considerable extent in New York and very largely in Chicago. Even where the grillage rests on quicksand it can carry heavy loads, having been successfully used for buildings of more than 20 stories. In such cases it has to be made so large as to cover almost the entire area of the cellar floor. Its advantage over the spread footing is that a much greater bearing may be obtained without going to excessive depths. The objection to such a foundation, however, is that any disturbance to the adjoining soil is liable to allow the quicksand to flow, and this unchecked would eventually wreck the building. A proposed subway route in New York under a narrow street along which are several high buildings with foundations of this type has recently been abandoned, as in the opinion of a foundation expert the construction of the subway would be fatal to these buildings.

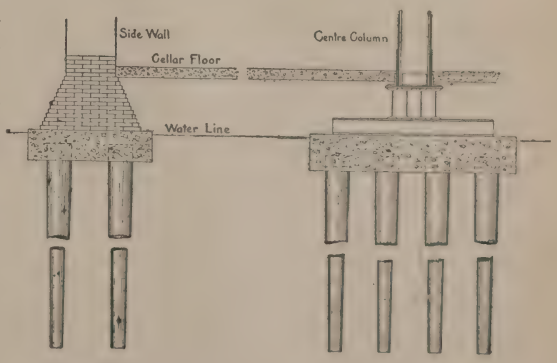


Fig. 6. The familiar wooden pile foundation, with combination of spread footing and steel grillage.

Probably the foundation best known to the layman is that on wooden piles. Their use is very old, having been used by the Romans and in a primitive form by the Lake Dwellers of Switzerland some 6,000 years ago. For wood to endure it must be kept perfectly dry or thoroughly wet. As the former is impossible it is essential that wooden piles should be entirely below the water-level. In New York City the ground water-level changes from time to time, and there have been several instances in which it has receded below the tops of piles, causing them to rot; to remedy this defect is a difficult and expensive matter.

The pile of commerce is a round stick of timber generally about six inches in diameter at the lower end and twelve inches and upwards at the butt, and varies from 20 to 60 feet in length according to the depth to which it is to be driven. The load a pile will carry depends upon the hardness of the soil on which it finally rests and also on the amount of friction of the earth on the surface of the pile. Piles resting on a soft bottom may bear considerable loads merely by friction, though, of course, it is better where possible to drive them to hard soil. When the latter is obtained a pile will sustain, depending on its size, 20 tons or more.

In making a foundation of piles, after they are driven to the required depth, the tops are cut off below the water-level, capped with timber or more usually with a course of concrete on which the walls or column piers are built. Fig. 6 shows a cross section of a typical pile foundation, the side walls having a spread footing so as to cover three rows of piles and the center columns resting on a grillage which covers a group of piles. Such a foundation, if properly designed, will carry very high buildings. The Park Row building in New York rests on such a foundation.

The objections to the use of piles are: 1, the danger of the water level receding below their tops; 2, in some localities they may be injured or destroyed by the teredo; 3, the rapid increase in the cost of wood; 4, the slight displacement of the soil and the vibration produced in it when piles are driven, may crack and injure the walls of adjoining buildings.

Piles are now made successfully of concrete. One method of making them is to force the concrete into hollow moulds in which a system of steel reinforcing rods has first been placed, thus forming a monolith of reinforced concrete. The moulds are removed when the concrete has set and the pile is then ready to be shipped to the building site,

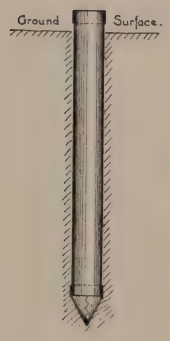


Fig. 7. Sectional View of steel shell of concrete pile driven to hard ground.

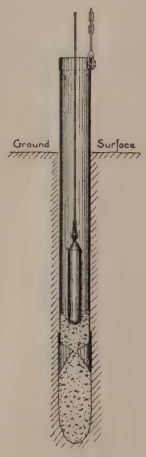


Fig. 8. Steel shell partially withdrawn and the concrete being rammed.

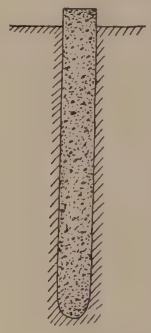


Fig. 9. The finished concrete pile.

where it is driven like a wooden pile. There is some difficulty in making these piles tough enough to stand the blows of the pile driver.

Another and better way is to make the pile in the ground. This is done by driving steel pipes to the required depth and filling them with concrete and withdrawing them. The pipes used are of uniform diameter, from 14 to 20 inches, according to the size of the pile desired. To the lower end is attached a steel point called an "alligator jaw." This is made in two halves, so that when the pipe is being driven the pressure of the earth keeps the halves tightly closed, but when the pipe is being withdrawn they are free to open. The pipe is driven with an ordinary pile driver fitted with a powerful hoisting tackle. When the required depth is reached, the pipe is filled to a height of about three feet above the lower end with concrete by means of a special dumping bucket. The pipe is then pulled up one or two feet, the jaws opening and the concrete remaining stationary. The concrete is then rammed with a drop hammer till it compactly fills the hole. This operation is repeated till the concrete is brought to the required height and the pipe is entirely withdrawn. Fig. 7 shows a sectional view of the pipe driven to hard ground. Fig. 8 shows the same pipe partially withdrawn and the concrete being rammed, and Fig. 9 a view of the finished pile.

Of all foundation construction, that resting on rock is the best, and the modern tendency is to start important buildings on it even when the cost is considerably greater, but it is well to point out that, other things being equal, a rock foundation is the cheapest, for as figures of bearing values show, rock has the greatest carrying capacity, and therefore the piers or footings resting on it may be made the smallest. The ideal economical condition is to have level rock just below the proposed cellar floor; if the rock is higher the expense of cutting it out is large, and if

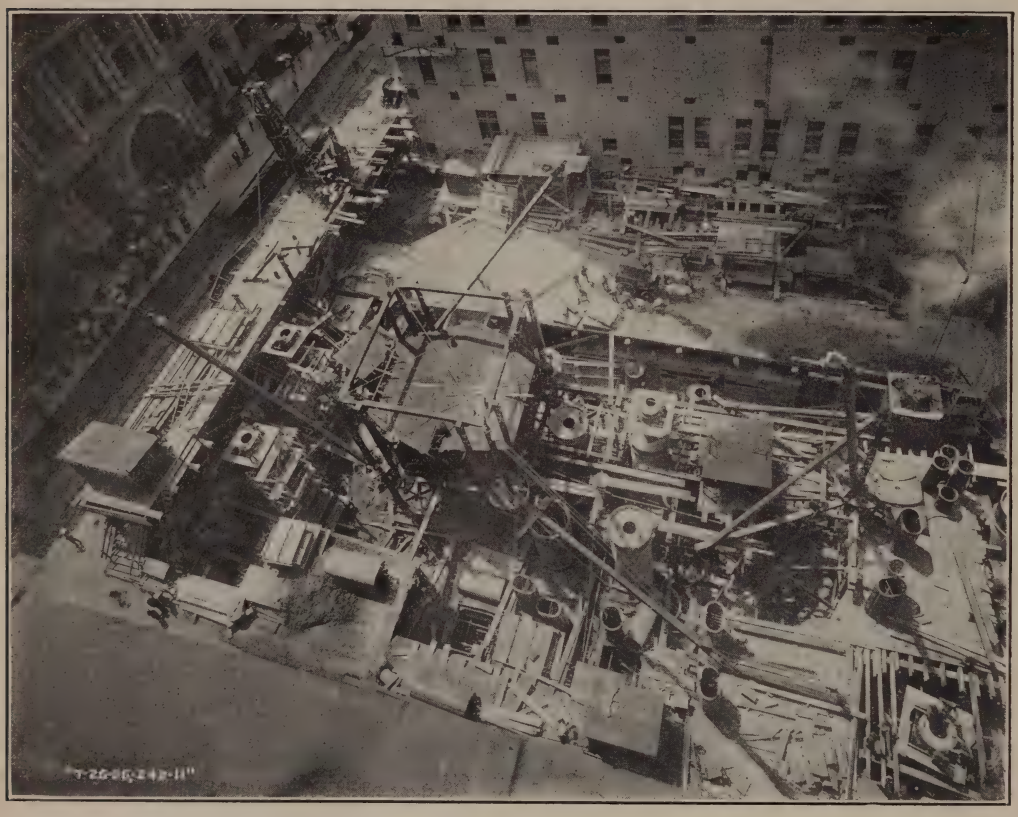


METHOD OF SHORING ADJOINING BUILDING FOR FOUNDATION OF ROYAL QUEEN BUILDING, NEW YORK.

In this construction driving needles are carried on temporary piles.

it is lower there is the additional cost of carrying the footings down to it. The cost of building on rock is therefore not due to the type of construction but to the fact that the rock may lie at such a level that it is very costly to get at it to begin the work. This is the condition found in the lower part of New York City. Rock lies from 60 to 93 feet below the Broadway curb, and on top of this is a hardpan from 5 to 18 feet thick. Above the hardpan is quicksand extending to the surface. The ground water level averages about 23 feet below the curb, so that there is a maximum head of water of 70 feet. The only possible way to reach the rock is by the pneumatic caisson, for any other method is sure to undermine the footings of adjoining buildings.

A pneumatic caisson may be described as a powerful box, open at the bottom, and having a strong flat roof about six feet above the lower edges. The latter are reinforced by steel, making a cutting edge. The space below the roof is the air chamber, and it is here that the men work. Caissons vary largely in size, but an average one is eight feet wide and twenty feet long and is built up vertically in sections about 15 feet high. Fig. 10 shows a sectional view of the type of caisson used recently in the foundation of the Singer and other buildings. From the roof of the air, or working chamber, a shaft about three feet in diameter extends to the top, making a passage for men and materials. At the top of the shaft is the air lock, which works on the same principle as



BIRD'S-EYE VIEW, SHOWING CAISSONS IN VARIOUS STAGES OF SINKING AT THE U. S. REALTY BUILDING, NEW YORK.

On this foundation the world's record for sinking pneumatic caissons was made; 70 caissons 75 feet deep were sunk in 60 days.

the canal lock and affords a means of entering or leaving the higher pressure of air in the shaft and working chamber.

The air lock is a steel cylinder about five feet in diameter and seven feet high, bolted to the top of the air shaft. There are two doors, one at the top and one near the bottom. A man called the lock tender always stands on its top to regulate the air valves and open and shut the doors. When a man is to go down into the caisson the lock tender shuts

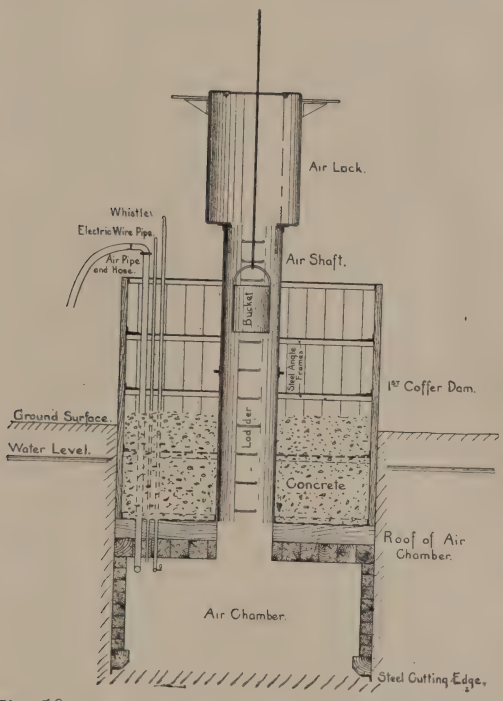


Fig. 10. The pneumatic caisson. Sectional view of a caisson in process of being sunk, showing the caisson about 15 feet under ground, the cofferdam half filled with concrete and the bucket being lowered to the air chamber. The cofferdam construction of planks bolted to steel frames is shown above the concrete. This improved air lock is the invention of Daniel E. Moran, C. E., of the Foundation Company.

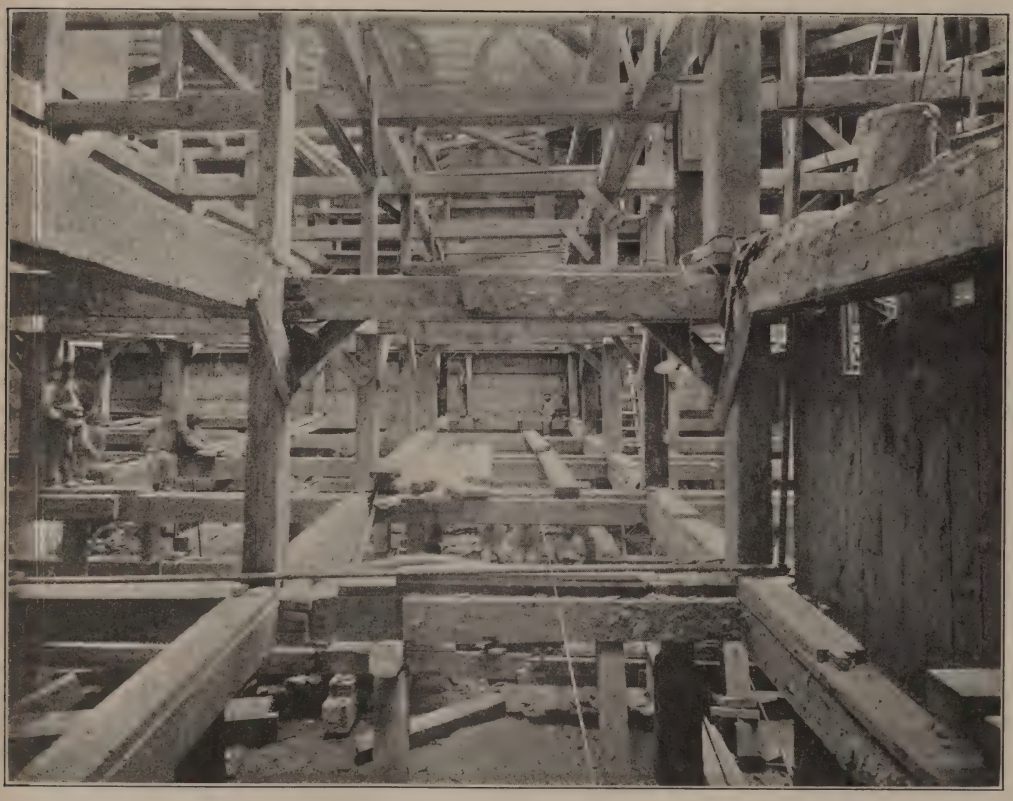
the lower door, opens the upper door, and the man goes in. The lock tender then closes the upper door and opens a valve allowing the compressed air in the shaft to flow into the lock till the pressure is equal in both. The lower door is then opened and the man climbs down the shaft on a ladder provided for that purpose extending all the way down to the working chamber. The closed upper door prevents the compressed air from escaping. When the man comes out again the process is reversed, and if a bucket is to be sent in or out of the caisson the method is the same. The number of men working in a caisson depends upon its size; some are so small there is room for only one man, while in others eight to ten men work at a time.

In starting a foundation contract the first thing that the contractor does is to see that the walls of the surrounding buildings are in good condition, for if necessary they must be shored and braced, for even a pneumatic caisson may disturb the soil while being sunk. The equipment is then brought to the site and made ready for work. This includes installing the air compressors and connecting them with lines of air pipes, which are laid at convenient places over the lot so that they in turn may be connected by flexible hose to the caissons, and thus deliver the air supply to them. The derricks, which must be strong enough to lift the 20-ton caissons into place, must be set up in such places that they will cover the greatest area and yet not be in the way of the work as it progresses. Heavy platforms must be built so that trucks can be driven within reach of the derricks to receive the material as it is excavated from the caissons. Room must be made for storing cement, sand and broken stone for concrete and other material. Small shops must be built for pipe-fitting work, blacksmithing and general repairs. When this and much more has been done the air chamber section of the first caisson is brought on a heavy truck and driven under one of the derricks, which lifts it off and lowers it to the exact location where it is to be sunk. An additional section, called a cofferdam, is then put on top of the air chamber section—the caisson proper—and sometimes a second cofferdam section is put on immediately thereafter. These cofferdams are somewhat like the air chamber section, except they have no roofs and are of lighter construction. Their object is to confine the concrete, with which they are filled, till it has set, and sometimes they are

removed before they reach the ground level and only the hard concrete filling sinks with the caisson. (See Fig. 9.)

The pipe-fitting gang bolts the sections strongly together, puts on the air shaft and air lock, puts in one or more vertical pipes for the air supply, another to carry electric light wires to the working chamber, and also a pipe at the upper end of which is a whistle for giving signals. Carpenters have meanwhile built a strongly braced frame around the caisson to act as a guide while the sinking process takes place. A concrete mixing machine is started and the concrete is filled into buckets and hoisted up and then lowered down into the cofferdams and deposited on the roof of the caisson.

The "sand hogs"—the men who work in compressed air—now go down the shaft to the working chamber and begin to dig, excavating the earth uniformly all over the area enclosed by the caisson. The material is hoisted in a bucket and dumped into carts which take it to scows sent out to sea for its final disposal. As the earth is dug out the caisson settles by its weight and that of the concrete which is being continually added above the roof. Soon the ground begins to get wet and then by opening a valve a small air pressure is admitted to the working chamber, the pressure being just enough to force the water out and make the sand dry. This process is continued until rock is reached. Of course the deeper the caisson goes the greater is the pressure of the water trying to force its way into the working chamber, and this has to be overcome by constantly increasing the air pressure. For a column of water 68 feet high the air pressure must be about 30 pounds per square inch above that of the outside air or 45 pounds per square inch.



DOWN IN THE FOUNDATION OF THE COMMERCIAL CABLE ANNEX, NEW YORK.

When all the earth has been removed and the rock cleaned off, the next thing is to fill the air chamber with concrete. This is well rammed in place, the work being done from the edges towards the center so that finally the concrete extends tightly packed from the rock to the roof and only a little space is left under the shaft, the space being the smallest that one man can occupy while he empties the last bucket of concrete, and this done he goes up the shaft, which is then filled by throwing in concrete from the top.

Let us see now what has been accomplished. Resting on the rock there is a solid mass of concrete, rammed tight against the roof of the air chamber. Above the roof is another solid block of concrete extending to a little below the cellar floor line. This gives an indestructible pier resting on rock on the top of which the columns of the building are set. There has recently been adopted an ingenious method by which the caisson roof is removed so that the concrete is one continuous mass from the rock to the top. The description given of the one caisson applies to all the others of a building and work on several caissons is carried on at the same time.

It is necessary for the men working in the caisson to be able to communicate quickly with the persons outside, and for this purpose a special pipe, previously referred to, extends from the working chamber to the top, a whistle being fitted to its upper end. There is a valve in the lower end of the pipe and when opened the compressed air rushes up and blows the whistle as it escapes. The number of blasts indicate such things as "more air wanted," "reduce air pressure," "pull up the bucket," etc.

The dangers in caisson work are: The chance of accidentally flooding the working chamber; risk of fire, and caisson disease, known as "the bends." The first is very rare with a skilful contracting engineer. The use of electric lights reduces the second to a minimum. But science has done very little in fighting the disease. Not much is known about "the bends" beyond the fact that all men working under air pressure are subject to it, and the effect is to produce a powerful and exceedingly painful contraction of the muscles. Medical science can do nothing for it and a bad attack is apt to be fatal, and it sometimes cripples a man for life. If, as is usual, the attack comes on in leaving the caisson relief may sometimes be obtained by the man's going back again and coming out very slowly, the air pressure in the lock being very gradually reduced. The danger increases with the air pressure, it being rare when the pressure is under 20 pounds. The practical limit of pressure under which men can work is 45 pounds. The hours the men work necessarily vary with the pressure. Up to 20 pounds they work for four hours, then a half hour rest, when each man receives all the coffee he wants, then three and a half hours' work, making an eight hour day or three shifts every twenty-four hours. At 45 pounds the men only work for forty-five minutes at a time. These pressures are all given per square inch above the atmospheric pressure.

Work of this magnitude is necessarily expensive and requires considerable time, but the results much more than warrant it for all important structures. The time taken to sink the caisson depends somewhat on its size, on the depth of sinking and on the amount of hardpan excavated. The record for speed was made in 1906 on the extension of the Trinity Building and U. S. Realty Building, where 87 caissons 75 feet deep were sunk in sixty days.



RESIDENCE, 844 FIFTH AVENUE, NEW YORK.
(Photo by A. Patzig.) Chas. A. Platt, Architect.

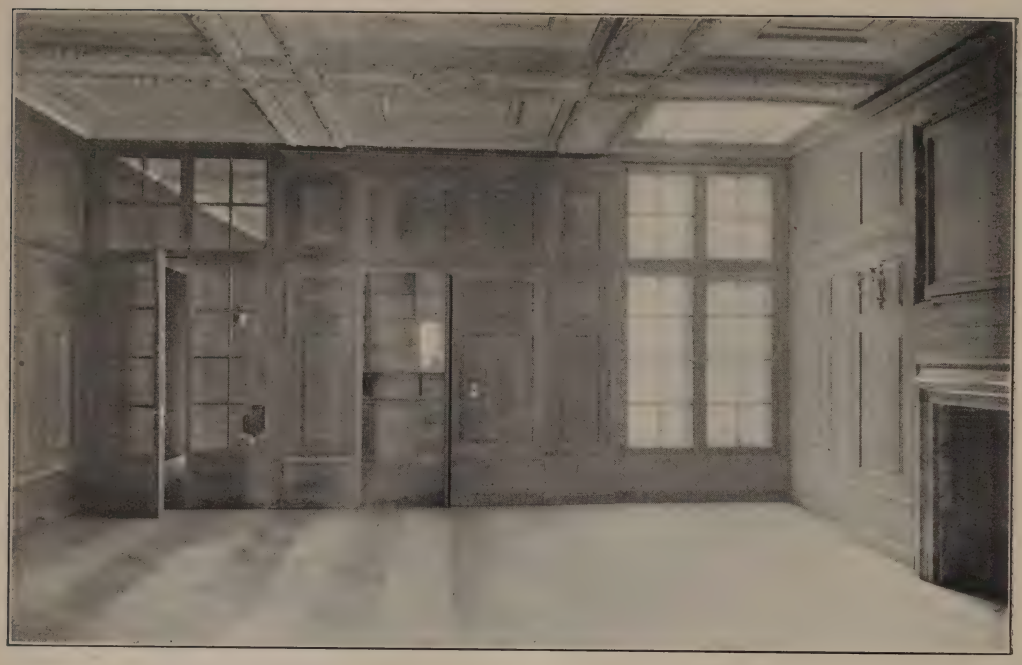
Residence, 844 Fifth Avenue, New York

The house illustrated herewith, which is situated at 844 Fifth avenue, in New York City, is a good example of the excellent results in the way of a New York residence which can be obtained by the use of comparatively simple and inexpensive means. An old four-story brown-stone house formerly occupied this site, and the Astor estate, which owned the property, proposed to substitute for this antiquated structure a new building, which should be designed and planned in accordance with the standards of convenience and good looks which now prevail in respect to private houses on Fifth avenue. In planning the new building, however, it was necessary constantly to keep economic considerations in mind. The building was not being erected for the occupancy of its owner. It was erected because a modern dwelling promised to rent better than an antiquated one. Money, consequently, could not be spent as freely as it would be in case the house was intended to satisfy the special needs of a rich man. As much money was appropriated as was necessary to build a house which would conform in all matters of taste and convenience to the best standards prevailing in New York; but every dollar which was spent had to be well spent for the purpose. It was not only a thoroughly good result which was wanted, but a good result which was obtained without unnecessary expense.

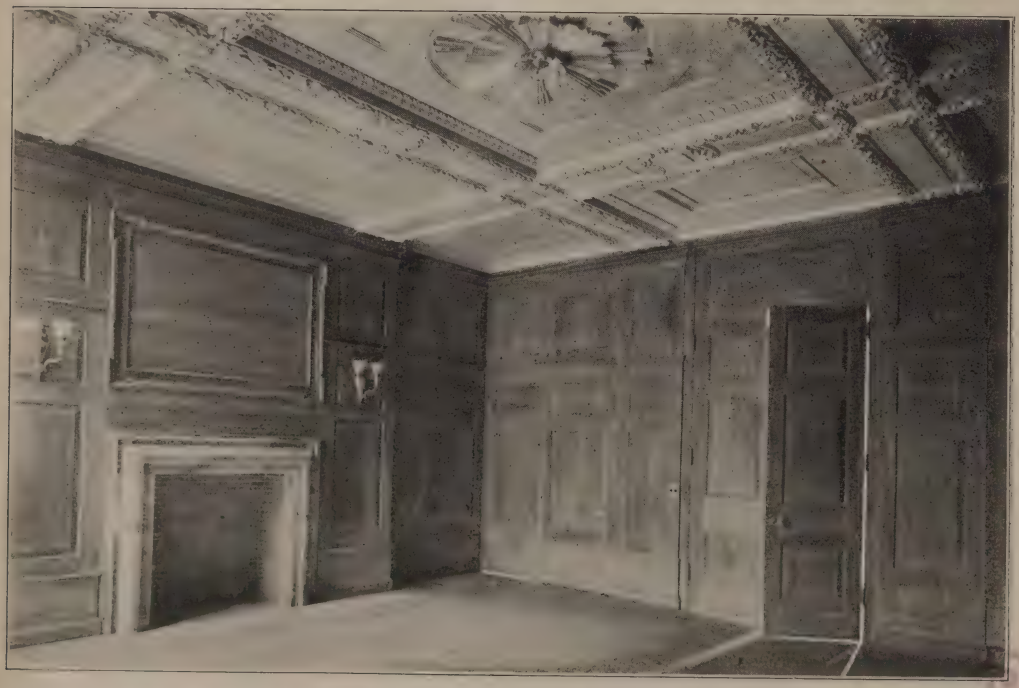


RESIDENCE, 844 FIFTH AVENUE, NEW YORK—DRAWING ROOM.
(Photo by A. Patzig.) Chas. A. Platt, Architect.

The architect has been very successful in meeting these conditions. He has designed a building which is adapted in every respect to be the residence of a family of refinement and wealth. It is both a more completely finished and better-looking dwelling than many private houses on Fifth avenue which have cost twice as much, while at the same time the money spent upon it was not so great that the rent will not yield a fair return on the investment. Every detail of the building has an air of quiet but positive good taste. It is as far as possible from



RESIDENCE, 844 FIFTH AVENUE, NEW YORK—THE DINING ROOM, LOOKING TOWARD PANTRY AND KITCHEN.
(Photo by A. Patzig.) Chas. A. Platt, Architect.



RESIDENCE, 844 FIFTH AVENUE, NEW YORK—THE DINING ROOM, FROM THE KITCHEN.
(Photo by A. Patzig.) Chas. A. Platt, Architect.

looking either cheap or ready-made, and it may be doubted whether there is another dwelling in the city, built particularly for the purpose of being rented, which possesses as much distinction combined with so little ostentation. A speculative builder, when he is confronted by a problem of this kind, usually spends a lot of money in loading the entrance hall with marble and in gilding the most important semi-public rooms in the house, while at the same time putting stock finish in the bedrooms and using wherever possible beneath the veneer cheap and unpermanent materials. Such methods produce poor results both in appearance and as a matter of economy; and it is refreshing to find a house which has been erected subject to stringent business conditions and which remains an appropriate residence for a gentleman and his family.



RESIDENCE, 844 FIFTH AVENUE, NEW YORK—LIBRARY.
(Photo by A. Patzig.) Chas. A. Platt, Architect.

One of the conditions imposed upon the architect, Mr. Charles A. Platt, was the preservation of the floor levels which had obtained in the old brown-stone dwelling, and this condition determined in large measure the limitations and the character of the design of the street front. The entrance door and hall are on the level of the former basement, and they can be reached only by descending a few steps into a sort of a well. It was impossible, consequently, for the architect either to give much architectural emphasis to the entrance or to compose the front of the building so that the different floors should each have a radically different value in the design. These conditions of a comparatively unimportant entrance and stories of practically the same height have been frankly accepted in the design. No attempt has been made to compose the front in an elaborate and artificial manner. The architect has sought to obtain his effect solely by the use of effective materials and a careful attention to detail. The front is dressed with a warm grey stone, which is pleasant both in texture and color, and this stone has been carefully cut at the joints, so as to fall into an attractive pattern covering the whole of the front. The windows with their small panes of glass fit admirably into this scheme. Those of the second story are framed in a somewhat more emphatic manner than their neighbors immediately above, while on the top floor they are appropriately very much reduced in

size. The conditions to which the designer was obliged to conform add a touch of stiffness to its mixture of firmness and delicacy, but the architect is to be congratulated on the frankness with which he has accepted the difficult conditions and the successful result which he has none the less obtained.

The front part of the ground floor is occupied by the entrance floor, and the rear by the kitchen and servants' quarters. An attractive staircase leads to the second floor, which contains the drawing-room on the front and the dining-room on the rear. The woodwork in the first of these rooms is light. The important architectural members of the room, the doorway, the windows and the panels, are emphatically framed by pilasters, and the panels in the walls can contain a fabric adapted to any kind of hangings which the occupant of the house may desire. The treatment of the room is both delicate and positive and it will require equally careful furnishing in order to properly complete the effect. The dining-room in the rear of the same floor is paneled to the ceiling with dark wood, and it makes both a handsome and dignified room. It is lighted by a large window and skylight at the right; and the effect of this window has been ingeniously balanced on the other side of the room by glass doors leading out into a small smoking room or den. The architect is peculiarly happy in devices of this kind, which turn to excellent account some of the unfortunate practical conditions of an interior design. The front room of the floor above is the library, which is also finished in dark wood, but which is not paneled. The effect of this apartment has been made much more gay by the rich though comparatively inexpensive subdued gilding of the architectural detail.



RESIDENCE, 844 FIFTH AVENUE, NEW YORK—STAIRCASE HALL.
(Photo by A. Patzig.) Chas. A. Platt, Architect.

NOTES & COMMENTS

SOME TIMBER HOUSES IN NORWAY

There is but little timber architecture anywhere—real timber architecture—not wood frame construction. And that little is but little known. Least known are the beautiful buildings of Norway excepting, perhaps, the famous stave churches that find their way into every history of architecture.

If you are interested in what is original and yet purposeful in every detail do not pass lightly by these pictures from the far North.



STABUR FROM TELEMARKEN, SAID TO BE THE OLDEST DOMESTIC BUILDING IN NORWAY.

A Norwegian "gaard" of the more pretentious sort consisted of several structures that made up the farmstead. These were grouped in a somewhat irregular manner about a court, thus forming a fortress in troublous times. Each structure was separate for ease of erection and to reduce danger from fire.

A wealthy nabob would have three houses to live in, one for winter, low ceiled and warm, one for summer open to the rafters, and one for guests, a large hall with one end partly screened off for the women and an open gallery at the other end for sleeping quarters. Then there were storehouses for clothing and food. It was on the exterior of these storehouses that the builder lavished his thought and energy, for they were the outward proof of his importance in the community—more so than the house in which he lived.

Besides these there were 20 or 30 other structures, such as kitchens, brew-houses, bakeries, stables, servants' quarters, etc. The storehouses are called stabur (long a and u) on account of their being raised from the ground on stones at the corners to protect them against vermin and moisture. It is these structures that distinguish Norwegian work and attract attention with their bold, naïve construction, the overhanging second story, the rich carving, the turning and the scroll sawing, and the plain,



STABUR IN BREDLAND, TELEMARKEN.
(Of the 17th century.)



STABUR FROM TELEMARKEN, NOW ON BYGDOE.



STABUR IN NAES, HALLINGDAL.
(Of the 18th century.)



LOFT FROM OSE, TELEMARKEN.
(Of the 17th century.)

unadorned sod roof. They are invariably of two stories. In the first story were kept the grain and other foods, in the second the clothing. This second story projected on one or three and sometimes on all four sides forming a gallery called a svalgang, or cool walk. It was constructed thus to protect the lower story from heat and wet, but also as a last resort when the enemy pressed hard. Here a determined stand could be made with the advantage of fighting from above. Five stabur and lofts are given to show the variety and treatment, for no two



LOFT FROM BJOLSTAD, NOW ON BYGDOE.
(Of the 15th or 16th century.)

are similar in spite of the general resemblance. The lofts were built same as the stabur, only not raised from the ground. The stabur from Telemarken is supposed to be the oldest piece of domestic building still extant in Norway, and is dated 1115. Though probably not so old, it is certainly curious enough and shows the very humble beginnings. The sod roof is not the least of its picturesque elements. Perhaps less effective than thatch, it is far more practical, being fireproof and very lasting. The foundation is of birch bark, and this is the real roof which must be put on in a workmanlike manner. Then comes the sod laid on edge a foot thick and seeded. The result is a heavy roof, warm in winter and cool in summer. It is even to-day the standard way of covering in the countryside.

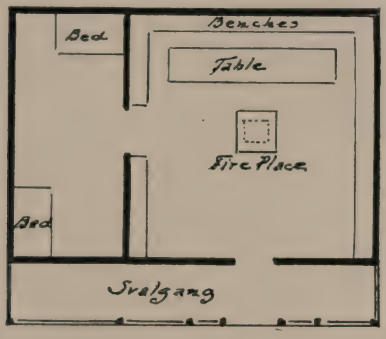
Perhaps less striking and bold in design than the stabur, the log residence is hardly less interesting. Fortunately the few good examples of timber construction still to be found are, at least in some cases, being taken care of. There are two collections: one near Christiana on a beautiful island of Bygdoe, which was begun and fostered by the now deposed King Oscar II. In Lillehammr far up in the beautiful valley of Gudbrundsdalen, is another begun by an energetic dentist, Herr Sandvig, and now become a public trust turned over to a society of which the original founder is still an unsalaried official. In this open air museum one can study the growth of the Norwegian home; the slow, almost imperceptible, steps from the first type, a reproduction of the original tent to the two-story house.

The earliest abode was a log enclosure without windows—a door on one side, port holes for shooting at the enemy, and a trap door in the roof for the escape of smoke and the inlet of air and light also when not too

stormy. The porch is no doubt later. Fire was built on the ground in the middle of the room on a large stone. One room was partitioned off. Such a one was Aaresstuen from Vooge.

The next step was to improve the fireplace. It was moved to a corner and walled up on two sides. Tradition ascribes this innovation to King Olof Kyrre about the end of the 11th century. As yet there were no chimneys. About the year 1200 royalty made another innovation, for it is said King Sverre introduced chimneys. Whether he invented them or just stole the idea, as he stole other things when he was out on some viking tour, is veiled in mystery. At any rate it was quite a change, and there soon followed windows and doors.

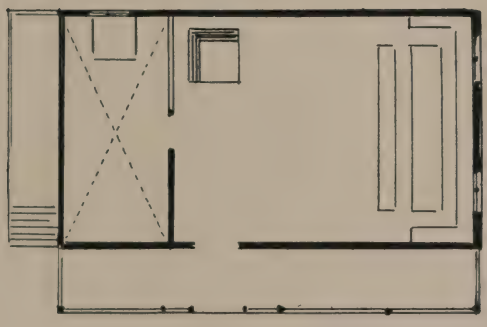
A third type was evolved by ceiling the small room over level and thus gaining an attic at one end of the house. By raising the roof of this attic above the rest and making a full story a picturesque type resulted. This room was called the maiden chamber, and the type called ramloftstuer, of which only three are known to exist. They are the highest development of the Norwegian log house, a fine, well-proportioned structure which suffers at the hands of the photographer. Last comes the full two-story house, of which two types are given. What more fascinating bit of porch design could be asked for than this with overhanging svalgang of Bjolstad. The heating of the second story was made possible by the cast-iron stove. Three interiors show the simple home life. The large hospitable open fireplace, the immense chairs carved out of a solid log, the table of planks 4 inches thick, the spinning wheel, the loom, and the numerous household articles, the products of sloyd, all bespeak the long, long winter evenings, when sagas and stories handed down from father to son took the place of



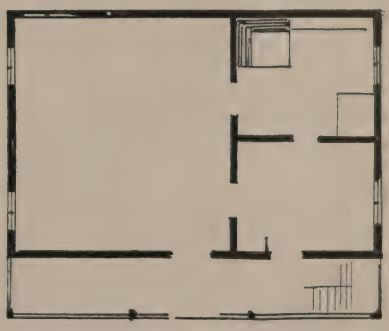
Aaresstuen - Vaage
Type I



Rogovnstuen
Type II



Ramloftstuen - Hjelfer
Type III + IV



Kapteinsstuen - Ringebu
Type V

SKETCH PLANS OF NORWEGIAN HOUSE—PLANS SHOWING THEIR DEVELOPMENT.



FROM THE SANDVIG COLLECTION, LILLEHAMMR.
Stabur to the left, Ramloftstue from Loekre (about 1660) to the right.

the modern newspaper. And who shall rise up and say they were less happy? By their fruit ye shall know them," and verily their architecture, the fruit of their busy hands and brains, betokens a happiness and a serenity such as is given to few to enjoy in these days of automobiles and tram cars. O. Z. C.

A NEW SCHOOL HOUSE PLAN

The application of "the cottage plan" to school houses has been successfully tried in Pueblo, Colo. A whole block is utilized for single story structures, and while this would make the cost prohibitive in large cities where land is very valuable, yet the plan should be practicable, if desirable, not only in the town but in outlying sections of cities. The report from Pueblo is exceedingly favorable; and not the least merit of the plan is that it permits of a modest beginning to which additions may be made as the surrounding population increases and needs are multiplied. A big building is usually either ahead of or behind present requirements. Fire danger, both in loss of life and property, is reduced to a minimum; problems of light and ventilation are simplified, and the sanitary gains of various sorts are considerable. The following advantages are also mentioned: There is a greater field for individuality on the part of both teachers and pupils, the teacher is able to take part in all exercises, and each room is independent in regard to discipline. The view from the ground floor is more attractive to children. Classes may have recess at different times. Stairs, with their accompanying danger, noise and fatigue, are eliminated. The artistic possibilities are greater. Music, exercises and games in one room do not disturb the sessions in another room. The school ceases to appear like an institution, and the personal side of teaching is emphasized—with a resulting greater attraction to the child and betterment to the teacher.

CITY PLAN EXHIBITION

There was held in Toledo a few weeks ago, through the co-operation of the Toledo Museum of Art with the Chamber of Commerce, a city plan exhibition. City plans have been a feature, and of late an increasingly important feature of municipal art exhibitions. But this is perhaps the first time in the United States when they have been the sole subject of one. Yet they are now numerous enough, and sufficiently elabor-

ate, suggestive and varied to make an exceedingly interesting exhibit. That in Toledo was open for a week, there was a very large attendance, and the exhibition proved a gratifying success. The Washington plans, which the Toledo papers describe as coming "in a special car, weighing a ton, and including 300 plans," were shown, as were those of Cleveland, Denver, Honolulu, Harrisburg, Buffalo, Oakland, and other cities.

REPLANNED COPLEY SQUARE

The improvement of Copley Square in Boston is of much more than local Boston interest. For many years the matter has been talked about, as well it might be. With the beautiful library framing one side, Richardson's Trinity Church as balance on the other, with the Art Museum occupying part of a third side, and the leaning tower of the "New Old South" at a corner; and finally with the city paying enormous damages—after years of litigation—to preserve an harmonious sky line around the open space, this little square has been the best known municipal art spot in the country. And yet its ground treatment through all these years has been barbarously inartistic. One cannot blame St. Gaudens for having taken so long to complete the sculpture for the front of the library, when one thinks what has been the square's surface development. It must be at least a dozen years since the Boston Society of Architects began to agitate an improvement. It secured plans through a competition; and at last, through the friendly offices of a councilman, and the pulling together of all forces, the city government has lately appropriated $40,000 for the improvement. The order was signed by the Mayor in the presence of municipal art workers, and the pen was saved as a souvenir. The plans adopted are those of C. Howard Walker. There are created four grass plots, arranged symmetrically on the axis of the museum and the library, the present streets forming the outside boundaries of this plotted area, and the two diagonal avenues intersecting at the centre of the square. At this point there is laid a pattern pavement. The grassed areas, planted with low shrubs and trees, and surrounded with sidewalks, are further adorned with lamps, fountains, etc. Copley Square will at last be more nearly what one might reasonably expect.



FROM THE SANDVIG COLLECTION, LILLEHAMMR.
Ramloftstue from Hjelter (1556), banquet hall with gallery.

AN IMPORTANT BILL

Andrew Wright Crawford, of Philadelphia, scarcely needs introduction to persons interested in municipal improvement topics. In addition to his knowledge of city park requirements, his enthusiasm and tireless energy in their behalf, in Philadelphia, he is an assistant city solicitor. In this joint rôle he drew up the bill presented to the Pennsylvania legislature to permit cities to buy land abutting on an improvement, for the purpose of reselling it. As this is a novel municipal authority, urged by the New York City Improvement Commission and widely discussed throughout the country, where there is envy of the ease with which foreign cities are by this means enabled to undertake improvements of which the cost would otherwise be prohibitive, there will be general interest in the terms of the bill. This is the greater because the Pennsylvania constitution is particularly restrictive at this point. The original draft, which has been sent to this department by Mr. Crawford, shows that the first section gives to cities the right to acquire land for the purpose of making or enlarging parks, parkways, or playgrounds. The second and third sections read:

"Section 2. It shall be lawful for and the right is hereby conferred upon cities of this Commonwealth to purchase, acquire, enter upon, take, use and appropriate neighboring private property within two hundred feet of the boundary lines of such property so taken, used and appropriated for public parks, parkways and playgrounds, in order to protect the same by the resale of such neighboring property with restrictions whenever the Councils thereof shall by ordinance or joint resolution determine thereon, provided that in the said ordinance or joint resolution the Councils thereof shall declare that the control of such neighboring property within two hundred feet of the boundary lines of such parks, parkways or playgrounds is reasonably necessary in order to protect such public parks, parkways, or playgrounds, their environs, the preservation of the view, appearance, light, air, health or usefulness thereof."

"Section 3. That is shall be lawful for and



FROM THE SANDVIG COLLECTION, LILLEHAMMR.
Parsonage (1550), Captain's house in background (1750).

the right is hereby conferred upon the cities of this Commonwealth to resell such neighboring property with such restrictions in the deeds of resale in regard to the use thereof as will fully insure the protection of such public parks, parkways and playgrounds, their environs, the preservation of the view, appearance, light, air, health and usefulness thereof, whenever the Councils thereof shall by ordinance or joint resolution determine thereon."

The fourth section declares such use of the land to be "for public use," and the fifth and final section provides that the adjustment of compensation and damages, where the city and private parties are unable to agree, shall be in accordance with the existing legislation that covers this point when the acquirement of park lands is under discussion.



FROM THE SANDVIG COLLECTION, LILLEHAMMR.
Interior Ramloftstue Loekre (1660). Banquet hall showing gallery.

AMERICAN ARCHITECTURAL TENDENCIES

There was much of interest in the thoughtful paper by R. Clipston Sturgis, of Boston, which was read a few weeks ago before the Architectural Association. His title was "General Tendencies of Modern Architectural Design in America, and American and European School Work." He reviewed briefly the architectural history of the country from Colonial days; and coming to modern times found for our architects, as compared to European, two great advantages and one great handicap. An advantage is that the American student, traveling everywhere, goes "with the eager eye of one to whom all is new and wonderful." Unlike the Englishman, the Frenchman, or the German, he has no native prejudice, is hampered by no conservative respect for the work of his own people. The other advantage is that "architects in the United States are largely drawn from the class who have the means for a thorough education as a foundation." Thus our students who travel "are generally men well equipped intellectually to take full advantage of the opportunities offered them." These advantages have had, he thinks, a two-fold result: On the one hand, the wealth of accumulated ideas and the lack of established precedent have incited to new effort; on the other, the study of the fine old examples has encouraged a sincere and deep rooted admiration and a modest following of precedents. The discouraging tendency of our architecture, says Mr. Sturgis, "is its individualistic character." This he finds to be "the natural outcome of our form of popular government." A result is that we are "so absolutely lacking in distinguished civic architecture. No autocratic power, either of an individual or of a group of men, has as yet been sufficiently interested in large architectural schemes as to ensure

their execution." We have no Napoleon, or London County Council, and no populace temperamentally imbued with the love of art or by inheritance subservient to law and order as is the populace of Rio de Janeiro or of Buenos Aires. But, he adds, "in view of recent developments, we may await this issue with more patience and courage, for city after city has awakened to a sense of its lost opportunities in the past only to determine that those that lie in the fuure shall not be lost. Here at least we are reaping the benefit of the big exposition groups, and the lesson they taught of the value of concerted action, of standard dimensions and repeats, of a well considered whole in which the parts, while admitting variety, yet conform to the general law controlling the whole." For the development of these plans, he says, we must depend on the people for support, and hence the plans must be rational and practical. On the whole, American architecture in his opinion has passed the stage of student and copyist, and is "entering—slowly, but surely and carefully—on the more responsible period of an imaginative handling of well-understood laws."

WHERE PARIS LAGS

One of the most prominent officials of Paris has formally cited American cities as offering models of what Paris ought to do. M. Forestier, the Inspector of Forests and Commissioner of Boulevards, Walks and Avenues, has lately brought out a report in which he discusses "Large Cities and Park Systems." He shows, says a review in *Revue Horticole*, that "Paris, shut in by its fortifications, is at present a far too overcrowded city. After the admirable effort of Haussman and Alphand, it has, as M. Forestier states, committed the error of halting midway and of failing to further develop its park system. It has failed to foresee that its uninterrupted development demanded the proportional development of its breathing spaces, its parks and walks. . . . The number of inhabitants for each hectare of park grounds, which is only 51.4 at Meriden, Conn.; 94.7 at Boston, 206.4 at Washington, 214 at San Francisco, and even 400 at Vienna, is 1,354.7 at Paris! In quoting these figures, M. Forestier points out that they would be lower if the calcula-



FROM THE SANDVIG COLLECTION, LILLEHAMMR.
Interior Loekre Stue (1660), showing grandfather's corner.

tion had been made to include the parks of Meudon, Saint Cloud and Versailles, the woods of Verrieres and the forests in the vicinity of Paris, which have not as yet been included in a plan of grounds to be reserved for the city, and the future preservation of which is not certain. In the interior of Paris, however, there are only 247 hectares of garden spots and parks open to the public, and it will within the next few years have the smallest area of breathing places and public parks of any of the large cities of the world. M. Forestier then quotes the examples of American cities. To numerous good residents of those cities who—not waiting until they die to go there—have thought of Paris as short of Paradise, this "inside" confession will be startling. To some others, aware that in municipal park work we have a foremost place, it will be only a gratifyingly convincing recognition. But even as such it is notable.

NEW YORK IMPROVEMENT COMMISSION

The final report of the New York City Improvement Commission, recently submitted to the Mayor, contains many plans and illustrations that are all directly germane to the text, instead of being mainly illustrative of work done in other cities, European and American. That is now becoming fairly familiar; and what one wants in his civic improvement library to-day are new pictures of proposed plans, and not additional pictures of the same old scenes and places. Of course in many communities, where the appeal must be popular, and where the public is presumably less familiar with Washington, Boston, Paris, Berlin and Hamburg, than is the intelligent section of New York's public, the illustration of what other cities have done is exceedingly important, much strengthening the argument. As to the recommendations of the New York Commission, these are numerous. They were so fully exploited in the press that there is no need to rehearse them here, and almost every one of them was tentatively put forward in the preliminary report two years ago, and was discussed at that time. The issue of that preliminary report may have been necessary, but it was a tactical mistake. Through it the final report was shorn of novelty—without which a thing can hardly attract public attention nowadays. This was done with no compensating gain, for the plans were then suggested with such modesty and "perhapsness" that they carried no weight. No city had greater need than New York that such a report be issued with every attendant factor favorable, and while the commission has put in a deal of honest work, and has made many excellent suggestions, it is doubtful whether New York, as a whole, will be much altered as a direct result of the report.

The Board of Estimate of New York at a recent meeting resolved: "That the plans and drawings accompanying the report of the New York City Improvement Commission to the Mayor and the Board of Aldermen be filed in the office of the Chief Engineer of the Board of Estimate and Apportionment for the information of the Board in the consideration of future improvements, and that the said Chief Engineer be instructed to report to the Board of Estimate and Apportionment as to which of these plans it would be practicable to carry out by proceedings involving assessments for all or a portion of the expense, which should be carried out at the expense of the city at large, and also which of said plans could advantageously be officially approved by the Board of Estimate and Apportionment at the present time."

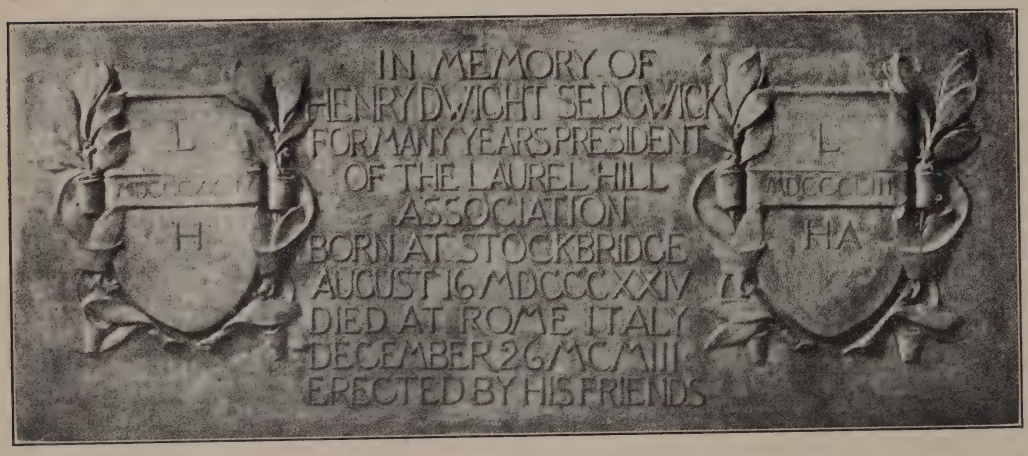
This is well so far as it goes, but it does not go far enough. The Chief Engineer of the Board of Estimate ought, one would say, to have been, whether he was or not, an ex-officio member of the Commission. The report ought to involve his official sanction of the plan, not necessarily as a plan to be immediately carried out. Immediate execution would involve a huge outlay. Mr. Pendleton, the Chairman of the Commission, has ingeniously argued that for this outlay, how great so ever it may be, the city would be able to recoup itself by condemning lands and afterwards reselling them at the advanced valuation which would accrue in consequence of the improvements. He even argued that this procedure might be practicable under the law as it stands. If not, he insisted that it ought to be made practicable by an amendment to the constitution of the State.

But these questions, interesting as they are, are not the actual question. The actual question is whether the report of the Commission provides a judicious scheme, an "ideal plan" of reconstruction, showing a wise prevision of the growth of New York, and deserving of execution if the question were a new and open one, and the city a "tabula rasa," or clean slate. We are all agreed that the Commission appointed a hundred years ago did not provide such a project,

or anything like it. If now, in the light of a century's experience, the present Commission has succeeded in gauging better the actual conditions of the city and forecasting more wisely the lines of its future development, the city ought to say so. That is to say, it ought to adopt the "ideal plan" as if the city were in fact a "tabula rasa" to be executed, as to any part of the city, when that part of the city does become a "tabula rasa." Of course this can come about only through disaster and calamity. But we have so many examples. If Chicago had had after its great fire of a generation ago, if Boston had had after its great fire of not much nearer date, if Baltimore had had after its great fire, if San Francisco had had after its earthquake and fire, a plan of improvement which commended itself to the municipal government, and if this plan had been conditionally adopted and ready to be put in execution when the calamity had done its work, every Chicagoan, Bostonian, Baltimorean, Franciscan would admit the enormous benefit of such a municipal provision. New York is not immune to any of the disasters which have befallen these sister cities, excepting, if even excepting, the seismic disaster of San Francisco. Why should not New York be warned in time? Why should not New York have a conditionally adopted plan of reconstruction, a plan to be executed if and in so far as calamity laid open to a wiser reconstruction any part of it which might thus have become a "tabula rasa"? Really, we know no satisfactory answer to this question.

A STOCKBRIDGE MEMORIAL

There are two reasons at least why the Sedgwick memorial, for which the Laurel Hill Improvement Association of Stockbridge has been collecting subscriptions, is especially deserving of note in this place. One is that the association is the parent town improvement society in the United States—the first of what has become a mighty horde. The second is the singular attractiveness of the memorial's design—its uniqueness, appropriateness, and beauty. From early days, the Laurel Hill Association has held open air meetings in a grove, where a huge granite boulder has made a sounding board for the speaker who stood before it. The memorial, designed by Daniel C. French and the detail work done by Augustus Lukeman, consists of a platform of small field boulders, with an upright monolith as reading desk, and a stone seat at the back for the presiding officer and the speakers, while back of all towers the great natural boulder. Bronze ornaments on the reading desk support wreaths of leaves when there is a meeting, an inscription in bronze letters is on the seat, and the platform bears a bronze tablet, describing the whole as a memorial to Henry Dwight Sedgwick, for many years president of the association. The character of the association and the importance of its meetings may be judged by the fact that last year's speaker's included Secretary Bonaparte and former Ambassador Choate.



SEDGWICK MEMORIAL ROSTRUM—BRONZE TABLET.

Stockbridge, Mass. Daniel C. French, Augustus Lukeman, } Sculptors.

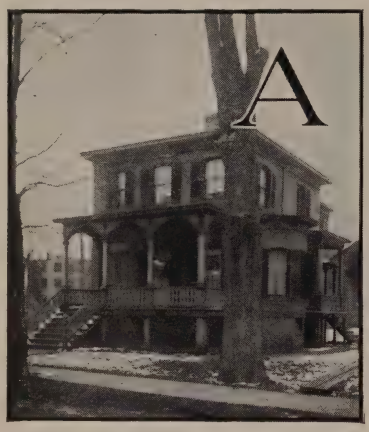


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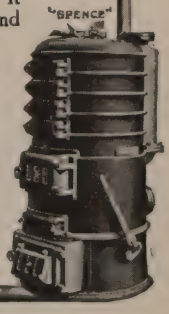
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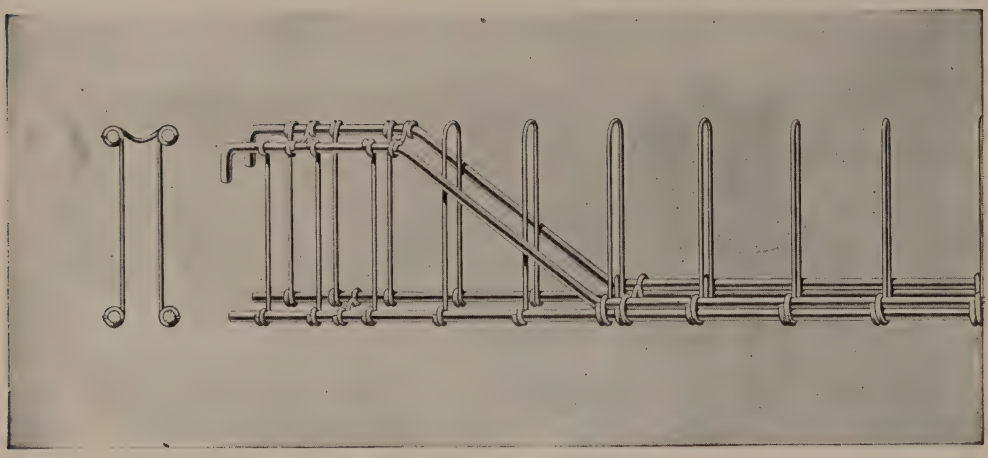
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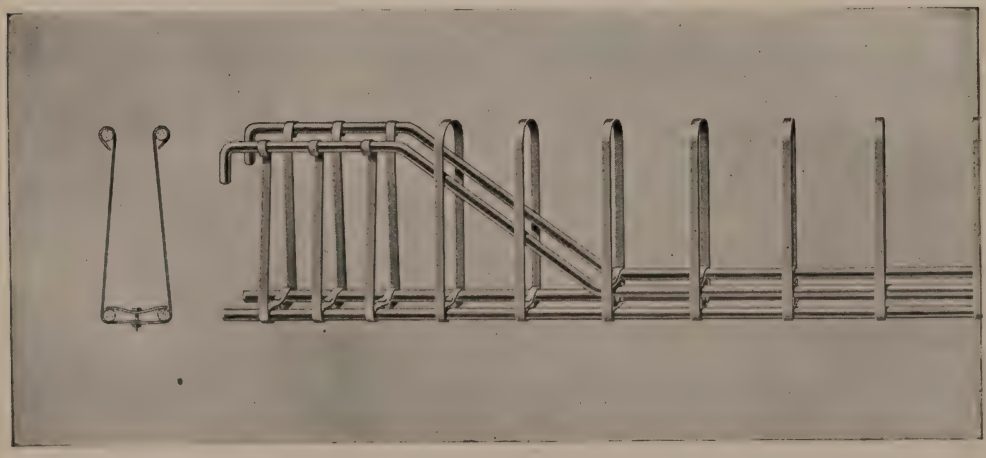
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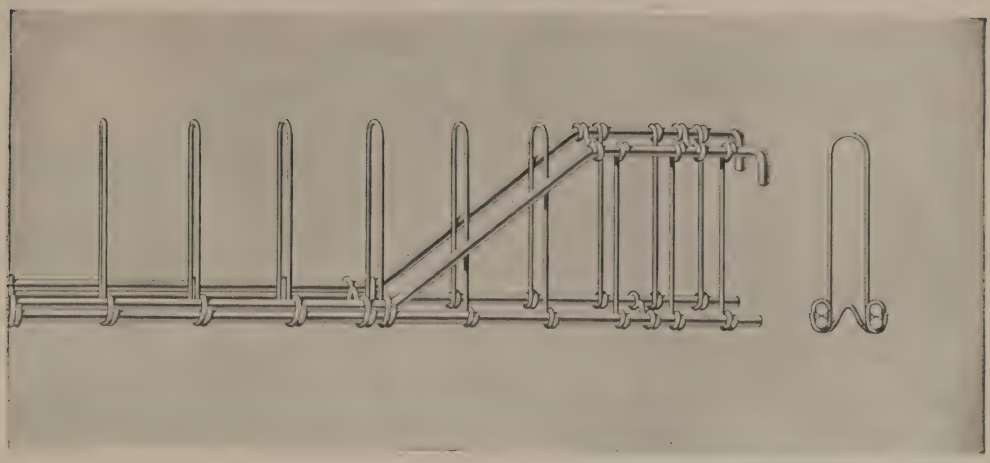
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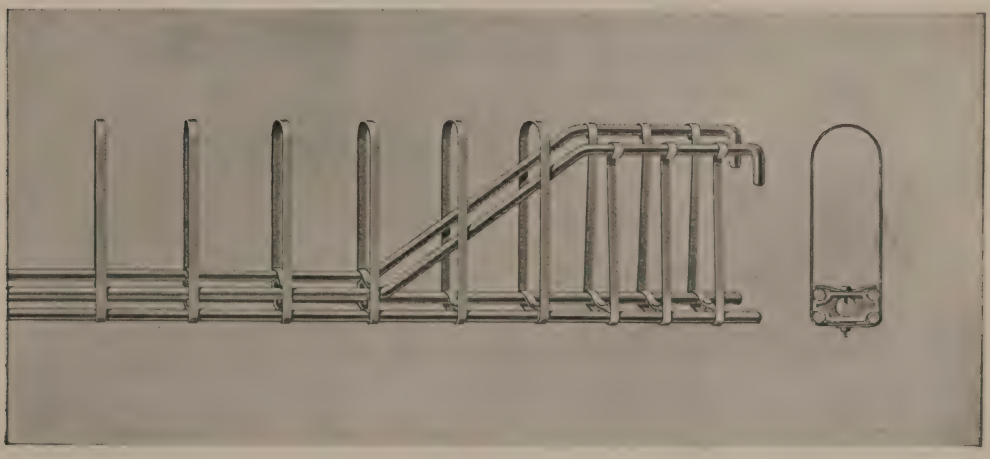
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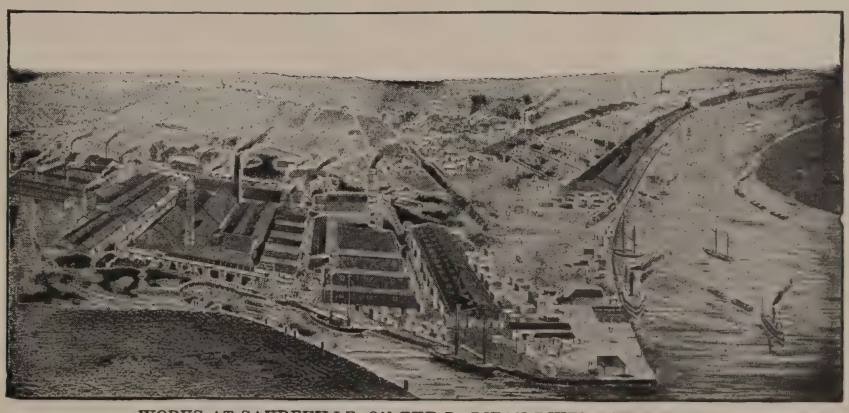
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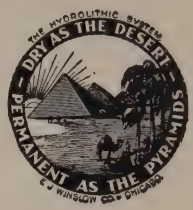
consists of two elements:

HYDROLITHIC COATING



and

KNOWLEDGE



of how to handle waterproof problems.

OUR GUARANTEE GUARANTEES!

Send to us for particulars, for expert advice, for lists of works and references

EASTERN AGENTS:
The Waterproofing Company
NEW YORK PITTSBURG BOSTON

E. J. WINSLOW CO., Incorporated
Consulting, Contracting and Manufacturing Engineers for Waterproofing
138 Jackson Boulevard, CHICAGO, ILL.

National Waterproofing & Cleaning Co.

OPERATING UNDER FARNHAM PATENTS

42 East 23d St. Phone, 2852 Gramercy NEW YORK

Paraffine Waterproofing

Saved the Obelisk in Central Park, New York, in 1885. In perfect condition today.

We are the oldest house in the country doing this class of work.

This process positively and permanently protects walls from dampness. A necessity for summer homes near the seaboard and in the country, where heavy storms force dampness through the walls. All projecting stonework and rear brick walls in cities should receive this treatment.

Do not confound our work with the various preparations of paraffine in solution. We use only pure, high test paraffine wax.

We are the originators of the only rational method of cleaning exteriors of buildings—

The Sand Blast Finishing.

Associated London Co., Farnham, Ltd., Caxton House, Westminster

We Delivered the Goods



Annex of Frick Building, Pittsburgh, Pa.
D. H. Burnham & Co., Architects

600,000

Mottled Enameled Bricks

Special order (no bricks in stock)
July 15th, 1905
First delivery - - August 15th, 1905
Job completed - November 1st, 1905

Contract Owen Estate Building, Detroit, Mich. 150,000 bricks.
Taken Nov. 7th, 1906. Completed January 5th, 1907.

Send for new catalogue or see Sweet's Index

The American Enameled Brick & Tile Co.
1 Madison Avenue, New York
Agents in all cities

The only reason architects formerly used coal tar for roofs was because it cost half as much as asphalt. Every architect knew that asphalt was better.

There is now so little difference in cost that there's no reason left for not using Trinidad Lake Asphalt.

The
GENASCO ROOFING COMPANY

PHILADELPHIA
New York Chicago

Offices in Principal Cities

For information about Genasco Ready Roofing and other Genasco Roofing Products, write to the Barber Asphalt Paving Company, Philadelphia, New York, Chicago or San Francisco.

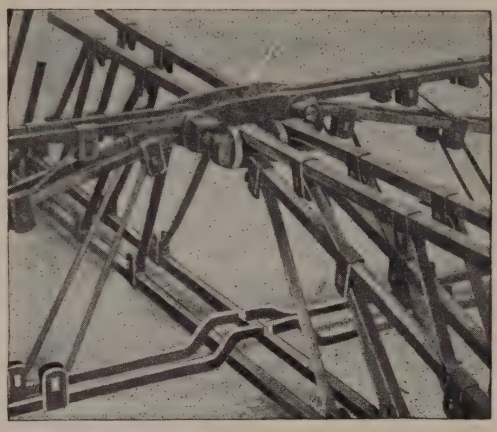
The General Fireproofing Co. System

The only Complete System of Reinforced Concrete

For each requirement, a specially designed material. May we not send literature?

The General Fireproofing Co. System—A 63.
Pin-Connected Girder Frames—A 63 and 64.
Cold Twisted Lug Bars—A-46, 50, 51, 63, 66.
Trussit Metal—A-52; Blue Prints—A-178, 185.
Expanded Metal—A-32 and 34.
Herringbone Expanded Steel Lath—A-29, 38, 39, 42, 55; Blue Print—A-319.
Diamond Mesh Lath—A-63.
Allunited Steel Studding—A-47.

The services of our engineering force, in an advisory capacity, are available without charge in connection with Reinforced Concrete Work. Sketches will be submitted on receipt of data.



Pin Connected Girder Frames provide accurate reinforcement and a complete steel tie, effected independent of adhesion.

THE GENERAL FIREPROOFING COMPANY

Home Office and Works, YOUNGSTOWN, OHIO

WASHINGTON, D. C., 420 Colorado Bldg.
NEW YORK CITY, 156 Fifth Avenue.
BOSTON, MASS., 161 Devonshire St,
CHICAGO, ILL., 115 Adams St.
ST. LOUIS, MO., 710 Missouri Trust Bldg.
NEW ORLEANS, LA., 409 Hennen Bldg.
ABERTHAW CONSTRUCTION CO., 8 Beacon St., BOSTON; SAN FRANCISCO, 82 Second St.

Medusa Waterproof Compound

Makes Concrete Impervious to Water

IT IS NOT A WASH

Gives permanent results.
Does not discolor concrete.
Positively prevents efflorescence.

Nearly all the Foremost Engineers, Architects, Railways, Contractors, Block Makers and Cement Experts are using it.

Write for pamphlet: Water pressure and absorption tests, with testimonials.

SANDUSKY PORTLAND CEMENT CO.

SANDUSKY, OHIO

EFFICIENCY in handling building problems requiring speed and skill in meeting difficult conditions is our specialty.

We would like the opportunity to communicate with architects about some of the buildings we have built, in the construction of which we saved both time and money for the owner.

If you want good work done quickly, give us an opportunity to figure on it—particularly if the job has engineering problems requiring resourcefulness.

Geo. A. Varney & Co.

General Contractors

156 Fifth Ave., New York City

OUR BUILDING SERIES

THE NEW GLASS



SCARRITT BLDG.—KANSAS CITY, MO.
ROOT AND SIEMENS, ARCHITECTS

"Superb Lighting" "Ideal Windows"

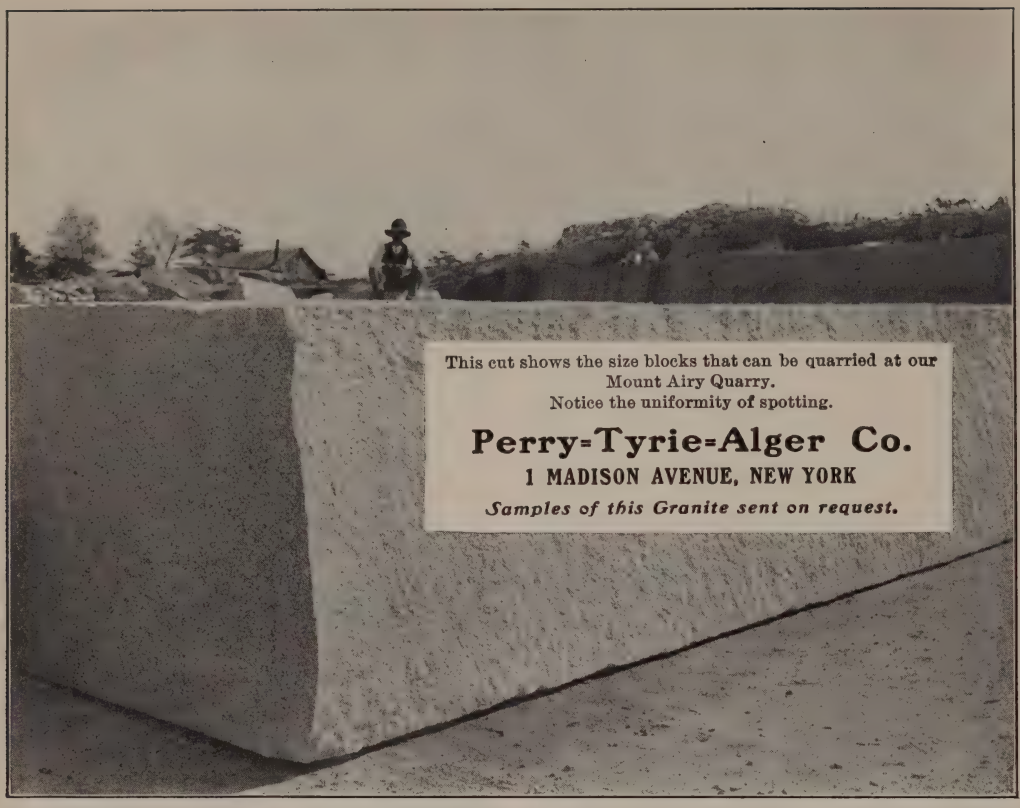
LARGE SINGLE LIGHTS OF OUR **"Imperial Plate Prism Glass"** FILL THE UPPER SASH OF MANY WINDOWS IN THE ABOVE BUILDING. THIS PRISM GLASS IS GROUND AND POLISHED ON ONE SIDE AND IS SOLD IN CUT SIZES UP TO 54x60 INCHES FOR STORE TRANSOMS AND UPPER SASH OF OFFICE BUILDING WINDOWS—EASILY CLEANED—FEW CORNERS AND NO WIRES.

DOOR LIGHTS AND OTHER INTERIOR GLASS WERE INSTALLED IN ABOVE BUILDING OF OUR **"Imperial Plate Ornamental Glass."** THIS GLASS IS GROUND AND POLISHED ONE SIDE —MADE IN FIVE STYLES—IN CUT SIZES UP TO 54x72 INCHES.

FOR SALE BY JOBBERS EVERYWHERE
SEND FOR PRICES, SAMPLES AND BOOKLET
(ALSO SEE CATALOGUE IN "SWEET'S INDEX," 1907)

PRESSED PRISM PLATE GLASS CO.
MORGANTOWN, WEST VA.

CHICAGO SALES OFFICE: 512 MONADNOCK BUILDING
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Sound Deafening

To determine how much confined air and what density give best results in material for sound deafening was a difficult problem. Material that is just a little too porous allows the sound waves to pass through it, while that which is a trifle too dense transmits sound waves by its own vibration.

LITH

is the result of a vast amount of experimentation on this subject and has proven by actual test to be the best sound deafener yet produced.

LITH is made of Silica Rock Wool and degummed flax fibre.

Chemical analysis of our Silica Rock Wool shows it to be absolutely free from sulphuric acid and iron oxides, and *permanent* in its chemical composition.

LITH is made in board form in thicknesses from one-half inch to four inches and will always remain uniform in density and composition.

The flax fibre gives sufficient body to hold the Rock Wool firmly so it will not settle, and at the same time gives the composition additional air capacity.

LITH is also an excellent material for heat and cold insulation.

We shall be glad to send a sample of LITH to any Architect free on request.

UNION FIBRE COMPANY, 101 Mechanic St., WINONA, MINN.

Chicago Office, 304 Great Northern Building New York Office, 277 Broadway

Pittsburgh Plate Glass Company

CARRARA GLASS DEPARTMENT

Frick Building, PITTSBURGH, PA. **New York Offices: 1135 Broadway**

PRODUCTS.—CARRARA GLASS, a white, opaque glass, made in thicknesses from ¼ to 2", and in all sizes, widths and lengths that would be extreme in marble. It is an absolutely sanitary material, homogeneous in structure impervious to attacks of acid or discolorations, and is non-absorbent and will not craze. Manufactured in several finishes: Polished and Honed or Flat finish.

ADAPTABILITY.—Carrara Glass is used extensively for wainscoting and flooring in all classes of buildings. On account of its sanitary properties it is becoming a necessity for wainscoting for operating rooms, toilet rooms, school lavatories and urinal stalls, or wherever an absolutely sanitary condition is required.

COST.—The cost of this material varies according to treatment, just the same as the cost of tile and marble.

INSTALLATION.—Carrara Glass is installed or set in buildings in practically the same manner that marble is. Regular marble setters readily handle the material—shaping, cutting and drilling it as they would marble.

We furnish detail drawings and working plans of perfected lay-outs of all classes of rooms where our material can be used.

SPECIFYING.—In order to insure a perfect installation and prompt delivery of structural glass, specify "Carrara Glass as manufactured by the PITTSBURGH PLATE GLASS COMPANY, Frick Building, Pittsburgh, Pa."



OPERATING AND STERILIZING ROOM AND CREMATORY, ST. LUKE'S HOSPITAL, N. Y.
Walls and floor of Carrara Glass. All internal and external angles of Sanitary Cove.

We are the largest manufacturers and jobbers of

Sheet Prisms

4-Inch Prismatic Tiles,

5-Inch Prismatic Tiles;

Prismatic Tiles Glazed in Copper Plated Bar

and

Solid Copper Bar.

Sheet Prisms Glazed in Design.

"Paschall Interlocking System" Vault Lights.

American 3-Way Prism Co.

134 North Tenth Street,
PHILADELPHIA, PA.

See Sweet's Index, pages 522-23-24-25.



THE east and west sides of the magnificent new Majestic Theatre, Chicago, E. R. Krause, Architect, are built of White Enameled Brick made by

Tiffany Enameled Brick Co.

MOMENCE, ILLINOIS

¶ The color and texture of the brick are in perfect harmony with the white terra cotta used on the front of the building.

Some of the reasons why the

"Cleveland" Expanded Metal Lath

is truly superior are:

1st. That it is not only made from sheets that have not been pickled in an acid bath, but is also covered with a special preparation that further protects it from corrosion.

2d. While RIGID, it is just as suitable for ornamental as for plain surfaces.

3d. It is REVERSIBLE—alike on the two sides, and cannot be improperly applied.

4th. It is SELF-FURRING and especially adapted to exterior stucco work.

5th. It keys quickly and thoroughly.

6th. It has a smooth selvage and is a comfortable, easy lath to handle.

ASK FOR SAMPLES

of either plain, painted or galvanized and be convinced.

We produce also the best brands of mortar colors and tin and terne plate.

Eastern Office:
1123 Broadway, New York
Telephone: 4271 Madison Square

The Garry Iron and Steel Co.
Cleveland, O.

Art in Steel and Mortar

"Steelcrete" Expanded Metal Lathing is the basis of the marvelously artistic and ornamental effects in many of the famously beautiful interiors of the country. No other system, or form of building material, combines the certainty of structural soundness with satisfactory execution of artistic design.

Steelcrete
TRADE MARK

Expanded Metal Lathing

apart from its artistic possibilities, has the advantage of being absolutely fireproof. It gives a wall, practically of steel and stone, amply substantial to carry other features of construction without injury. It is immeasurably superior to other forms of lathing, because it insures perfectly clinched and keyed mortar.

"Steelcrete" is the mark of the original expanded metal, and a guarantee of full standard weight, gauge and strength.

Valuable catalogue, showing many applications of "Steelcrete" Lathing and concrete reinforcement, sent free on application.

THE ASSOCIATED EXPANDED METAL COMPANIES, 227 Fifth Ave., New York, N.Y.

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AMERICAN HOMES *and* GARDENS

An Illustrated Seventy-two Page Monthly Magazine

We make a special offer to five hundred readers of this magazine. It is an offer that the house of Munn & Company have never made before. Their $10 book, "American Estates and Gardens," and their publication, "American Homes and Gardens" (subscription price, $3.00), for **$7.50**

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AMERICAN ESTATES AND GARDENS

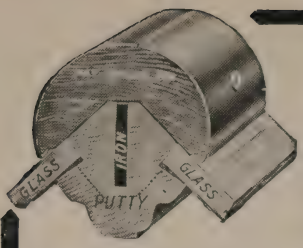
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AMERICAN HOMES & GARDENS



THE
PETZ
Patent Store Front Construction

unites great strength with neat artistic appearance —takes up minimum space—gives most display room. Can be had in any finish.

PETZ REMOVABLE, METAL COVERED OUTER CORE

permits setting glass in a few minutes from the outside without disturbing window display or removing window enclosure. This exclusive feature makes instant appeal to all merchants. Endorsed by leading Plate Glass Insurance Companies.

Free Book on Metal Store Fronts

sent on request. Samples sent on request.

Detroit Show Case Co.

"Show Case Makers to Progressive Merchants"

477 West Fort St.
Detroit, Mich.



STANLEY'S

Ball Bearing Hinges

In Wrought Bronze and Steel

BEAUTIFUL
NOISELESS
STRONG

Artistic Booklet and Calendar Free

THE STANLEY WORKS
NEW BRITAIN, CONN.
79 CHAMBERS STREET, NEW YORK
See our catalogue in "Sweet's" Index.

Richards

Door Hangers



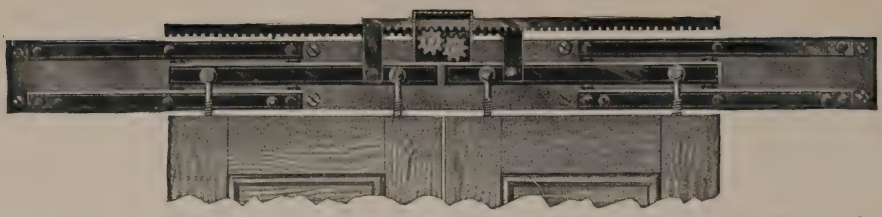
Our **No. 122 Royal Ball-Bearing Trolley House Door Hanger** is the one which we are most frequently using to illustrate this series of advertisements, because it is thoroughly typical of the Richards line. We make a large number of different hangers for as many different purposes, so that we can always supply the exact one needed.

The **No. 122 Royal Ball-Bearing Trolley House Door Hanger** is perfectly noiseless, the wheels run on hard maple, the adjustment is in hanger and also in the track.

The track can be easily taken down ***after the walls are plastered.***

Four sets of balls in each hanger and overhead center stop.

Richards Mfg. Company, Inc.
AURORA, ILL.
New York Office: 101 Reade St.
See our catalogue in "SWEET'S INDEX," pages 574-575-576



Reliance Hanger and "Double Gear" Device

For moving two doors in opposite directions and enabling the operator to move both doors at same time

RELIANCE BALL BEARING DOOR HANGER CO., 1 MADISON AVE., N. Y.

THE DAVIS
Compound Inlaid Door

is based on a new idea. There being no panels and varying thicknesses these doors act as fire retarders to an extraordinary degree. The only ornamentation is in the simple ebony and holly inlay. They are made in mahogany, oak and birch. Write for our literature.

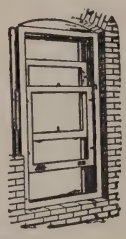


Our Catalogue, pages 463-64-65, Sweet's Index.

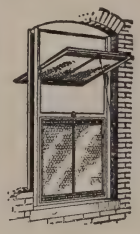
E. J. Davis Manufacturing Co.
CHICAGO

THE VOIGTMANN WINDOWS

embody the latest rulings of the Fire Underwriters' Laboratory and are accepted as Standard by all Building Departments.



The Voigtmann Adjustable Weather Guide Window, Interior View Showing Sash Weights.



The Voigtmann System of Double Glazing, with Removable Ventilated Sash.



The Voigtmann Standard Automatic Closing and Locking Windows a Specialty.

For further information address

Voigtmann & Company

Manufacturers under patents of
THEIR SPECIALTIES IN

Metallic Window Frames and Sashes

CHICAGO
42-54 East Erie Street

NEW YORK
427 West 13th Street

The Sperry Casement Window Lock & Adjuster



It Positively Locks the Window When Closed

No auxiliary lock is required in windows of ordinary height.

It is completely covered by the window stool; no levers or rods project into the room.

Write for booklet and prices

Oscar C. Rixson Co. 111 W. Harrison St. CHICAGO

Fire Doors That Are Good Everyday Doors



Top View showing the position of Door when open.



SIDE VIEW SHOWING HORIZONTAL TRACK

Use fire doors that work right, not only as fire doors, but as doors.

The Prouty Fire Door slides as an ordinary door on a horizontal track and the weight is not attached to the door till the fusible link releases chain.

Notice the curved track that holds door away from wall when open and brings tight against opening when closed.

Made in full accordance with underwriters' specifications.

T. C. PROUTY CO., Ltd., Albion, Mich

NEW YORK CITY
23 Warren St.

BOSTON, MASS.
19 Pearl St.

SAN FRANCISCO
40 Montgomery St.



Richardson Doors

Make Each Room A Separate Building

Economy in maintenance, safety and insurance make Richardson Doors cheaper than wood. They are finished in Antique Copper and Brass Plate, or the Natural Wood Grain. For All Fireproof Buildings.

COPPER ENTRANCE DOORS
QUIRK MEMORIAL, DETROIT
DONALDSON & MEIER, ARCHTS.

THORP FIRE PROOF DOOR CO.

MINNEAPOLIS MINNESOTA



Higgin Window Screens never "stick," they are made *entirely* of *metal.*

Weather has no effect upon them. They never swell nor warp, crack nor rot. They work up and down in their metal channels as smoothly year after year as the day they are put up. The frames of

Higgin All-Metal Window Screens

are made of *copper* or *steel,* finished in enamel or dull antique. They are not painted, never need painting, and have a neatness and inconspicuous beauty impossible to obtain with wide, thick wooden screens.

The netting is solid bronze wire—*rust-proof,* and of a fine mesh that *keeps out mosquitoes* as well as flies.

We have representatives in all the large cities; we will take measurements, deliver and fit screens anywhere in the U. S.

Catalogue sent to architects and owners on request.

THE HIGGIN MFG. COMPANY

504-524 Washington St. | Newport, Ky.

It is a great error to assume that

Fireproof Windows

are valuable for "fireproof" buildings only.

Thirty-one per cent. of all fire losses are due to the "exposure hazard."

If, then, a building has brick or other incombustible walls, two-thirds of the danger by fire will be eliminated if fireproof windows are installed.

Insurance on buildings and contents will be reduced accordingly.

We make fireproof windows, and make them ***right.***

We solicit the opportunity to explain the excellence of our methods and estimate on the work.

Our little pamphlet
The Logic of Fireproof Windows
is worth ten minutes of any architect's or builder's time to read. Ask for it.

Harry C. Knisely Co.

273 S. Canal St., CHICAGO

The **"RAPP"**

Patent "Standard"

Fireproof

Doors, Windows Shutters, Trim, etc.

With Solid Wood Core Covered—Copper, Bronze or Kalamein Iron.

REPRESENTATIVE WORK:
Columbia University
Metropolitan Life Building
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and hundreds of other prominent buildings

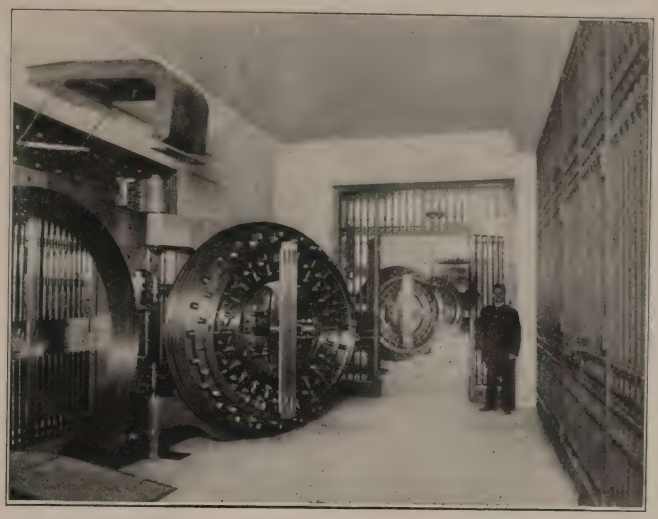
Catalogue on Application

JOHN W. RAPP

1 Madison Avenue, NEW YORK

TELEPHONE CONNECTIONS

WORKS:
(Covering 2 City Blocks)
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Borough of Queens, N. Y.



Battery of Vaults in New Building of the American Trust and Savings Bank, Chicago, Ill.

Manufactured By **York Safe and Lock Company**

Makers of Bank and Safe Deposit Vaults, Fire and Burglar Proof Safes and Vault Doors, Safe Deposit Boxes, etc.

Factory: YORK, PA. **Salesroom: 55 Maiden Lane, NEW YORK CITY**



Mullins
Fireproof Window
Proved Best by Every Test

is absolutely fireproof and actually does what no other window can do—it stands every test. **Ask for an estimate** or write for our convincing catalogue.

We also make everything in architectural sheet metal work—statuary, skylights, wrought iron grilles, cornices, etc. 120-page catalog of stock designs on request.

The W. H. Mullins Co.

340 Franklin St. ***Salem, Ohio.***

The Northwestern Terra Cotta Company

MANUFACTURERS OF HIGH GRADE ARCHITECTURAL TERRA COTTA

Chicago Illinois



KNICKERBOCKER HOTEL

The "Giant" Sash Chain,

perfect in every detail, gives absolute satisfaction and is specified by all architects. Used, of course, in the Knickerbocker Hotel.

SMITH & EGGE - Bridgeport, Conn.

"MONARCH" SASH CHAIN—CONTAINS MOST TIN



HIGH IN TIN MEANS HIGHEST QUALITY IN ALL RESPECTS

BRIDGEPORT CHAIN COMPANY :: BRIDGEPORT, CONN.



THE SHELBY CHIEF

As Inevitable as Fate

IS THE CLOSING OF A SWINGING DOOR IF EQUIPPED WITH A

"SHELBY CHIEF" DOUBLE ACTING FLOOR HINGE

1. Works quietly, but quickly. 2. Tension easily adjustable. 3. All working parts above floor. 4. Notable saving in cost of setting as compared with others.

Our Catalogue page 587 Sweet's Index

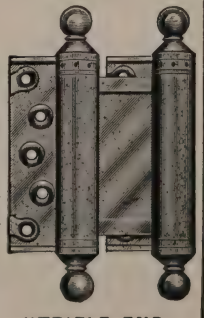
Shelby Spring Hinge Co., Shelby, Ohio



CHICAGO SPRING BUTTS

TRADE CSB CO MARK

THE "CHICAGO" and "TRIPLE-END" SPRING BUTTS in their individual characteristic construction are adapted to all the requirements of automatic door operation.

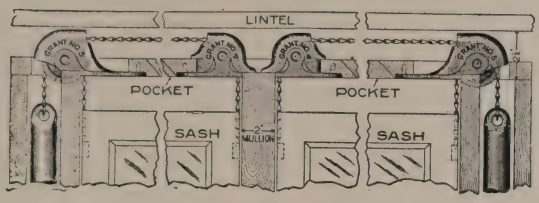


"TRIPLE-END"

Chicago Spring Butt Company

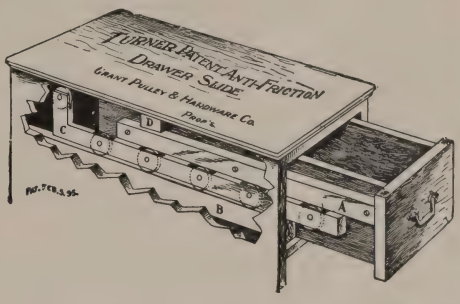
CHICAGO CATALOGUE ON REQUEST NEW YORK

The Grant Overhead Pulley



The overhead pulley obviates the use of lead weights, as it gives more pocket room. These pulleys can be used in single, triplet and quadruple windows.

They are the only draw slides on the market that are absolutely noiseless. A drawer fitted with the Turner Attachment cannot fall from the case when pulled out suddenly.



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GRANT PULLEY & HARDWARE CO.

Offices: 35 WARREN STREET, NEW YORK

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DO YOU KNOW That there is a magazine that abstracts and condenses the best literary material of general interest contained in the hundreds of engineering, scientific and technical periodicals of America and Europe, and reprints valuable technical information from the daily papers, trade pamphlets, Proceedings of Technical Societies, speeches, lectures, etc., that never gets into the regular technical press? That is only part of the field occupied by

TECHNICAL LITERATURE

A MONTHLY REVIEW OF CURRENT TECHNICAL PUBLICATIONS

220 BROADWAY - - - - NEW YORK

Besides thirty to forty articles of this kind, it gives announcements and authoritative reviews of books, new features of technical education and a classified, descriptive

Index to Technical Articles in Current Periodical Literature

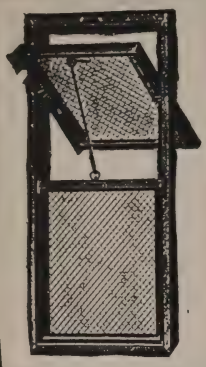
comprising some 500 references and brought down to the first of the month of issue.

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MANUFACTURERS

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SLATE, TILE, METAL ROOFING
METAL SKYLIGHTS, CORNICES, ETC.

See our Catalogue in Sweet's Index





THE CLIFT FOLDING GARMENT HOOKS

Particularly adapted for apartment houses and dwellings, a necessary article in halls, vestibules, closets, bath and toilet rooms, chambers, cloak rooms, restaurants, stores, auditoriums and offices.

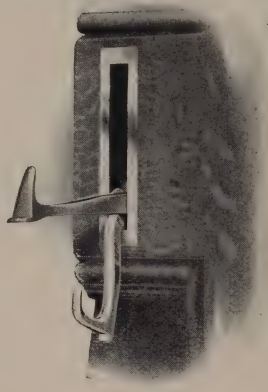
Absolutely essential where space is limited.

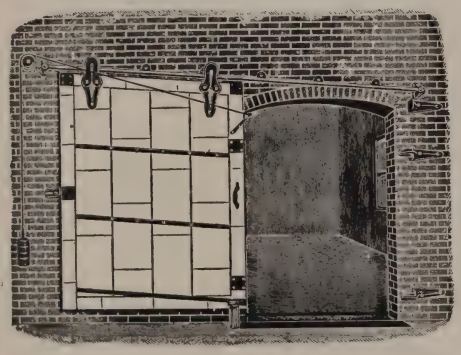
In erecting apartments or residences, this folding hook will be a distinctive feature.

THE CLIFT COMPANY

212 Cuyahoga Bldg., Cleveland, Ohio, U. S. A.

Depth of mortice five-eighths of an inch.
Send for pamphlet and price list.





ALLITH FIRE DOOR HARDWARE

Is regularly inspected and labeled under the supervision of UNDERWRITERS' LABORATORIES (INC.)

Actual test has proven these fixtures to be the strongest on the market.

Simple mechanical construction and easiest to erect.

ALLITH MANUFACTURING CO., Chicago, Ill.

SPECIFY AND ASK FOR

Hercules Steel Joist Hangers and Post Caps

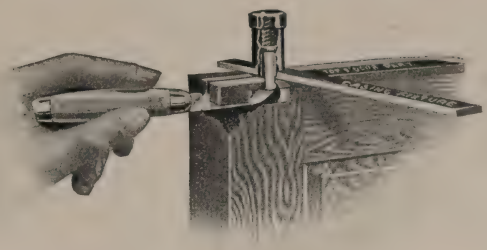
Strongest and Lightest Made *Labor Savers*

Manufactured by

THE HERCULES STEEL AND IRON CO.

Write for Catalogue *Office, 337 The Arcade, CLEVELAND, O.*

One of the TROUBLES of



LOOSE TOP PIVOT (Note Spring)

HOUSE CLEANING ABOLISHED

¶ House cleaning necessitates the moving about of furniture, rugs, etc., and of the doors, which become scratched and disfigured, the double-acting door receives the worst punishment.

¶ For the most convenient arrangement—remove the doors and set aside.

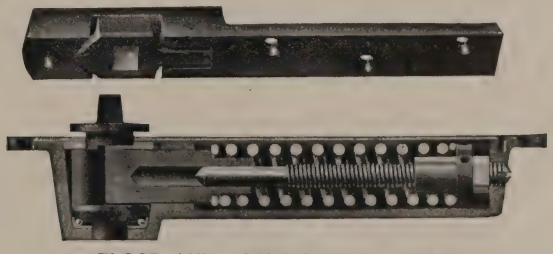
¶ If the doors are hung on Columbian Floor Spring Hinges, they may be removed in ten seconds without special tools and by an inexperienced person.

¶ To remove door, open part way as shown in cut above, insert knife blade or nail, raise the pivot and lift the door out of place.

¶ It may be replaced as quickly.

¶ The Columbian Floor Spring Hinge is just the depth of a double floor, 1¾ inches, has a holdback feature so door will stay open when opened at a right angle, is easily adjusted to swing either a light or heavy door, but send for catalog No. 8 and we will give you more exclusive features, or see Sweet's Index.

¶ Forty-eight years manufacturing spring hinges means something.



FLOOR AND BOTTOM DOOR PARTS

THE COLUMBIAN HARDWARE CO.

MANUFACTURERS

CLEVELAND, OHIO

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168 Church St.

SAN FRANCISCO

CHICAGO
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An Architect or Builder Can Save FIFTY DOLLARS

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in preference to one of the more complicated machines.

In amount and quality of work and in ease of operation the **"American"** holds its own with any machine made.

The key and type are on one steel bar, saving 1200 parts, 15 pounds in weight, and Fifty Dollars in cash.

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THE AMERICAN TYPEWRITER CO.
268a Broadway, New York

Please send to me absolutely free full particulars of your high-grade low-cost typewriter.

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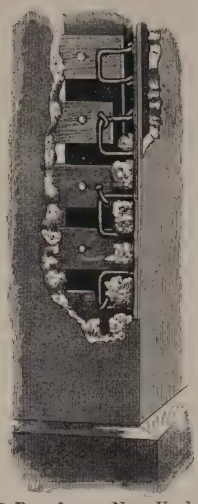
The American Typewriter Co.
268a Broadway
New York

HUNT METAL CORNER CO.

Factory: Westboro, Mass.



The Greatest Corner in Plaster



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Merritt & Company, 1024 Ridge Ave., Phila., Pa.
Hunt Metal Corner Co., 1005 Monadnock Block, Chicago, Ill. Tel. Harrison 5656.
Fred H. McDonald 90 The Gilbert, Grand Rapids, Mich.
Carolina Portland Cement Co., Charleston, S. C.; Atlanta, Birmingham and New Orleans.
A. J. Capron, Portland, Oregon.
Ricketson & Schwarz, University Bldg., Milwaukee, Wis.
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Every Merritt Locker, while perfect in itself, is but a unit of an indefinite number. Each locker has an individual top, shelf and bottom. All parts are made to gauge, therefore interchangeable. The flexibility of Merritt Lockers permits them to be arranged in groups, in rows or around the side of a room. At the same time they interlock firmly with one another.

Details of construction, illustrations of various types, our booklet, "Unit Steel Lockers," sent on request.

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1007 Ridge Ave. Philadelphia, Pa.

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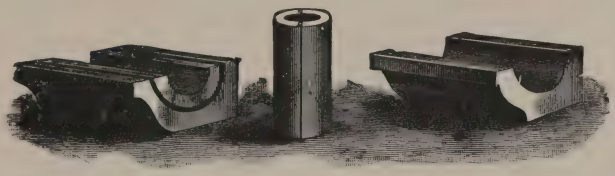
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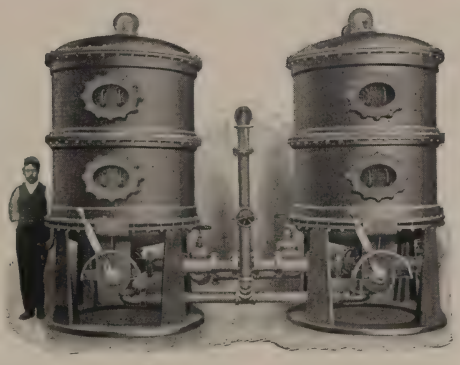


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THE ILLUMINATING ENGINEERING DEPARTMENT

OF THE

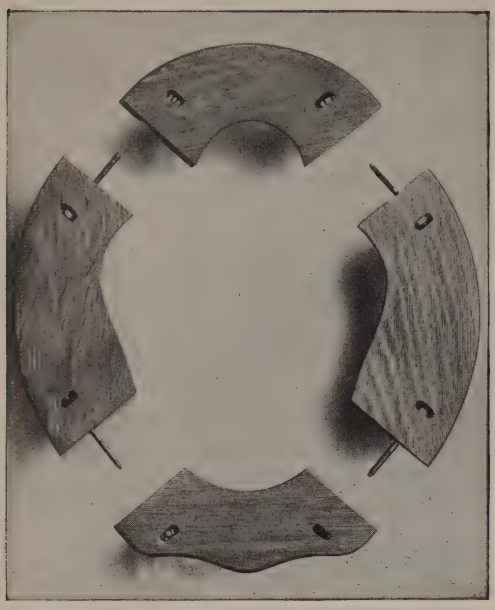
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SAMSON SPOT CORD can be distinguished by our Trade-Mark, the Colored Spot. It has been proved by long experience to be the most economical device for hanging windows.

SAMSON CORDAGE WORKS, BOSTON, MASS.



This illustration shows the construction of the

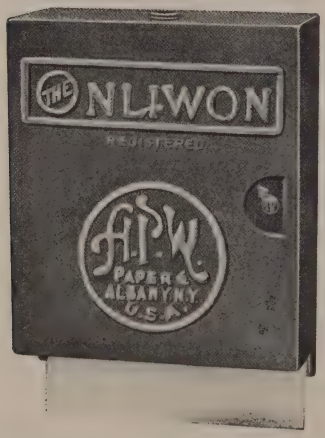
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It is built on scientific principles and does not belie its name. *Send for our new Catalogue.*

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The "Onliwon"

Toilet Paper Cabinet



Delivers units of two sheets uniformly, invariably and *silently*, eliminating the waste and litter incident to the unprotected roll or package. Nickel plated steel *locked* cabinets for hotel or other public places. Handsomely ornamented metal for residential use.

Sample cabinet with booklet showing **special designs for new construction** will be sent architects or others on application.

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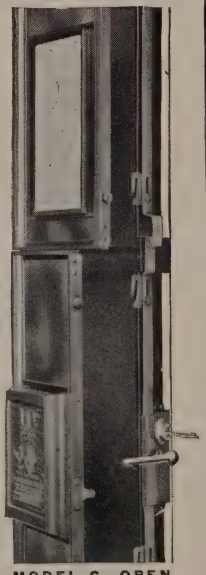
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SHOULD BE SPECIFIED BY NAME WHERE THE STANDARD AUTHORIZED MAIL CHUTE EQUIPMENT IS DESIRED.

DESIGNATE "MODEL C" IF THE VERY LATEST AND BEST FORM IS REQUIRED. INTERIOR UNDER GOVERNMENT LOCK, BUT INSTANTLY ACCESSIBLE TO AUTHORIZED PERSONS.

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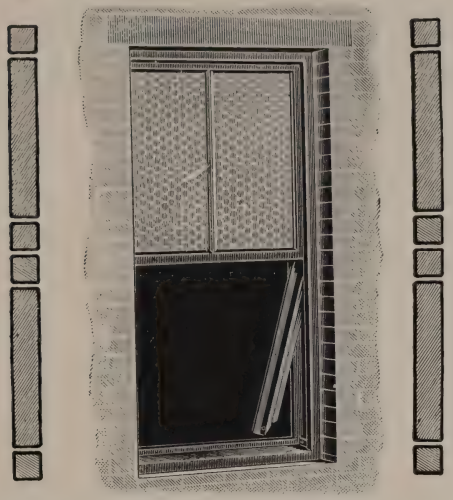
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Metal Fireproof Window Frames and Sash

Approved by the Boston Board of Fire Underwriters, and made under the specification of The National Laboratories.



Prices quoted on application.

BADGER'S FIRE EXTINGUISHER, bearing the label of the Underwriters' Laboratories.

63 to 75 Pitts St., Boston, Mass., U. S. A.

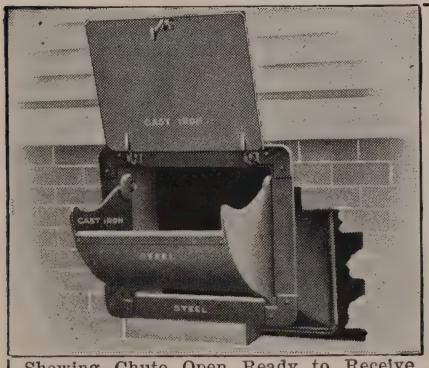
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ELECTRICAL CONSTRUCTION AND ENGINEERING FOR LIGHT, HEAT, POWER

¶ The Brussel Method and organization is devoted exclusively to the electrical problem of the building. Properly distributed light for illumination and accurately applied conductors for power transmission :: :: ::

15 WEST 29th STREET
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Showing Chute Open Ready to Receive Fuel, Door Automatically Locked Open, Protecting the Siding.

IT'S THE LITTLE THINGS THAT COUNT

and the Architect who specifies a

Majestic Coal, Wood and Vegetable Chute

Shows JUDGMENT and FORETHOUGHT

Made throughout of wrought and cast iron, it will outlast the building. Does away with broken glass, splintered and disfigured sash and soiled foundations. Hopper swings in and door closes flush with wall, locking automatically. *A Catalog for a Postal.*

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FRED LIEBRICH, 1005 Monadnock Bldg., Chicago, Western Representative



Made only by

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BROOKLYN, N. Y.

The Anchor Ventilator

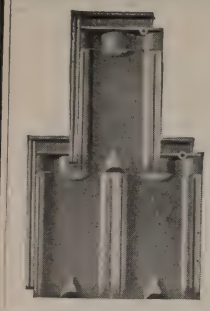
is the surest medium for direct and constant ventilation among all such apparatus on the market to-day.

This has been proved by a series of tests made by an expert engineer, formerly in the employ of the United States Navy.

Other Specialties { Genuine Charcoal Iron Roofing Tin / Metal Spanish Tile / The Unique Metal Shingle

The Glass Top Anchor serves the double purpose of skylight and Ventilator





For ready reference, see 'Sweet's,' pp. 300-1

A chain is only as strong as its weakest link

and a tile roof only as tight as its joints

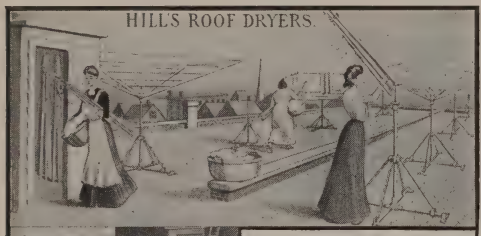
National Double Interlocking Roofing Tile

has a perfect double interlock at both sides and ends, making it

Weather Resisting ∴ Fireproof ∴ Parmanently Tight

These tiles are subjected in process of manufacture to a pressure of thirty-five tons and are, in consequence, exceedingly dense and compact. Alternate heat and cold have no effect upon them, nor do acid fumes, gas or salt air. Once set in place, they are practically indestructible. Made in a large variety of shades by

THE NATIONAL ROOFING TILE COMPANY - - - LIMA, OHIO





Hill's Balcony Dryer

HILL'S FAMOUS DRYER

An indispensable factor in modern housekeeping.

Adapted to roof, balcony or lawn.

Holds from 110 to 150 feet of line.

When not in use it can be detached and folded compactly, occupying little space.

Special sizes to order.

Further information furnished on request. Write for Catalogue 50.

THE HILL DRYER CO. WORCESTER, MASS.

1133 Broadway, New York, N. Y.



IF YOU WANT A GREENHOUSE, grapery or conservatory and insist on its being architecturally attractive and constructed to grow the best possible plants—then get in touch with Lord and Burnham Co., Greenhouse Designers and Manufacturers, 1133 Broadway, corner 26th Street, New York. Boston Branch, 819 Tremont Building. Philadelphia Branch, 1235 Filkit Street.

Plant for Immediate Effect

Not for Future Generations

Start with the largest stock that can be secured! It takes over **twenty years** to grow such Trees and Shrubs as we offer.

We do the long waiting—thus enabling you to secure Trees and Shrubs that give an immediate effect. ***Fall Price List Now Ready.***

ANDORRA NURSERIES, Chestnut Hill, Philadelphia, Pa.

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CORRUGATED BARS

— FOR —

Reinforced Concrete

Most Efficient Bond
Lowest Comparative Cost
Easiest Handled

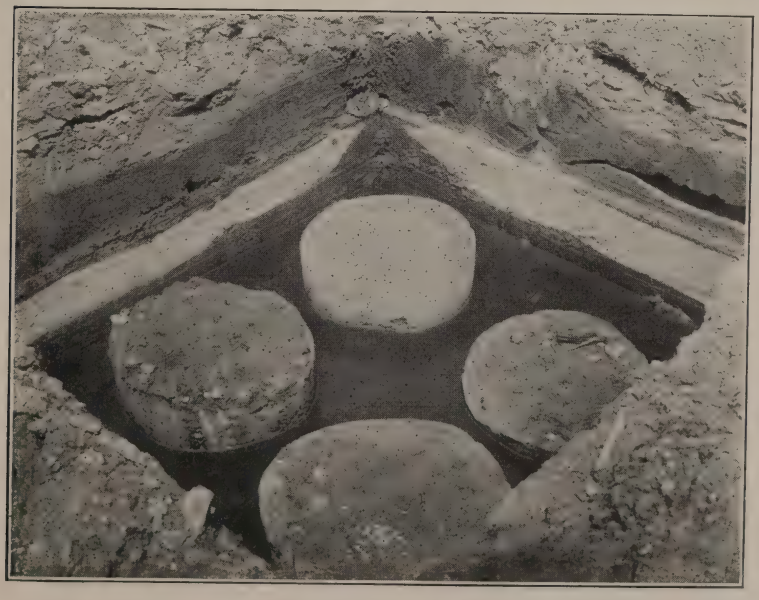
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All Official Tests and Juries Have Given CORRUGATED BARS First Place

WE WILL FURNISH YOU THE PROOF ON REQUEST

Expanded Metal and Corrugated Bar Co.

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Raymond Concrete Piles

A pier of 20-inch Raymond Concrete Piles. Shell has been removed from the top 6 inches of the pile, so that it will have a perfect bond with the concrete of the footing.

Raymond Concrete Piles have proved *economical* and *satisfactory* wherever used. Tell us your foundation troubles. We can help you. We positively guarantee the perfection of every pile. Send for our illustrated catalogue. It is extremely interesting.

Raymond Concrete Pile Co.,

135 Adams Street, CHICAGO
71 Nassau Street, NEW YORK



The slate on this roof—which looks and is as good as new—was put on this barn after 60 years of service on a church when the latter was torn down. (Note the streaks of tar or asphalt "run" from the adjoining composition roof under the influence of heat and sun.) Here is proof of the claim that

Genuine Bangor Slate Roofs

outlive the building without paint or repairs

Can you say more? Or ask more?

Write for our free Roof Book

a compilation of carefully authenticated roof data, concisely and conveniently arranged for reference—giving the words of

- the tin people about tin roofs
- " tile " " tile "
- " shingle " " shingle "

the patent people about tar, gravel, asphalt, flint, etc.

the slate people about slate roofs.

Sweet's Index, pp. 286-289

Genuine Bangor Slate Co., Pool Bldg., Easton, Pa.

COLUMBIAN SYSTEMS



Midshipmen's Mess Room, U. S. Naval Academy, Annapolis, Md. Ernest Flagg, Architect

Columbian System of Fireproof Construction used throughout

Columbian Reinforced Concrete Company

26 West 26th St., New York, N. Y. ***Times Bldg., Pittsburgh, Pa.***

Owners of Columbian Systems of Reinforced Concrete

SEE CATALOG IN SWEET'S INDEX

KAHN SYSTEM
of Reinforced Concrete



Interior view, before completion, of the immense Assembly Room (122 x 401 feet) of the Geo. N. Pierce Manufacturing Plant at Buffalo. Plant has over 325,000 square feet of floor space. Built complete according to the Kahn System of Reinforced Concrete.

"The Factory Behind the Great Arrow Car"

The completion of the Pierce Automobile Plant at Buffalo marks an epoch in Reinforced Concrete construction; and furnishes positive proof of the structural possibilities and range of the Kahn System.

These buildings of concrete, reinforced by the Kahn Trussed Bar, are as substantial as though carved out of solid stone, are monolithic in type, fireproof, and have the granite-like qualities of concrete united with the elasticity of steel.

We have prepared an elaborate description of the Pierce Plant under the title of "The Typical Factory," for limited distribution. We will mail you a copy if you write your request on your business letterhead.

TRUSSED CONCRETE STEEL COMPANY

19 Congress Street

LONDON DETROIT TORONTO

THE Universal Portland Cement Company announce the Removal of their General Offices, on May 1st, to the 14th Floor, Commercial National Bank Building, Chicago, Illinois.

Also the establishment of Pittsburg Offices in the Frick Building, Pittsburg, Pennsylvania.

Chemical Composition of Whitehall Portland Cement

We have a large corps of competent chemists employed at our mill, who carefully make chemical tests every hour during the day and night on the raw material, as well as the finished product.

WHITEHALL is honestly, generously and thoroughly made, with individual features making it the **acme** of perfection.

The Whitehall Portland Cement Co.

Philadelphia Boston Atlanta

Reference Sweet's Index Pages 97, 98, 99

Corrugated Concrete Pile Co. of America

1170 BROADWAY, NEW YORK

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NEW CATALOG "A"

Embellishments for Concrete Buildings

THE HARTFORD FAIENCE CO., HARTFORD, CONN.



THE SCHWAB RESIDENCE — Maurice Hebert, Architect

ATLAS PORTLAND CEMENT USED IN THE CONSTRUCTION OF THIS FINE RESIDENCE

Atlas Portland Cement

The Standard American Brand

ALWAYS UNIFORM

"Concrete Country Residences," our latest book, shows photos and floor plans of about 90 concrete houses, and should be of great value to those who are about to build.

Copies sent, charges paid, upon receipt of $1.00.

The Atlas Portland Cement Company

30 BROAD STREET :: :: NEW YORK

THE attention of Architects and others interested in electric lighting efficiency is respectfully directed to the announcement of this company in the first volume of Sweet's Index, page 871.

The "Two Balls" Adjuster there illustrated and described has been adopted by some of the largest electric light users in the country, including the United States Government itself.

THE VOTE-BERGER COMPANY
Manufacturers of Telephones, Switchboards and Appliances
La Crosse, Wisconsin



RYERSON PUBLIC LIBRARY
Grand Rapids, Mich.
Shepley, Rutan & Coolidge, Architects.

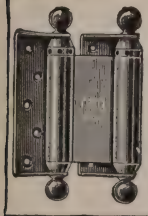
Built by

C. Everett Clark Co.

Building Construction

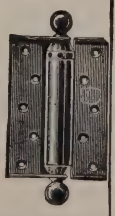
Suite 1405-1406 Title & Trust Building
100 Washington Street, CHICAGO

BOMMER
SPRING HINGES



could be specified

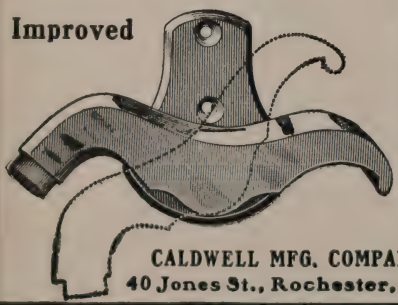
They cost no more than inferior kinds



Bommer Bros., Brooklyn, N. Y.

Empire Door Holder

Improved



50 per cent. greater pressure on the floor than any other. Easy to apply Easy to operate

CALDWELL MFG. COMPANY
40 Jones St., Rochester, N.Y.

A Home in Texas

is worth having, and should be obtained soon, as land values are steadily increasing, as people come to know of its advantages.

Mild Winters — Pleasant Summers
Productive Soil — Plenty of Pure Water
Convenient for Northern and Foreign Markets
and Opportunities not to be Found Elsewhere

No land to sell; but a postal card will bring you honest descriptive matter and map. We will also be glad to put you in touch with parties having land to sell on the SANTA FE—Locate on a north and south railroad — It is important.

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G. A. DOBBIN
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WHY DO HOSPITALS PREFER THE Magneta Electric Clock System?

Because their clocks are admirably adapted to the sickroom, being entirely noiseless.

The system gives exact uniformity of time throughout the building, needs no winding or supervision and gives observatory time.

A Five Years' Written Guarantee Given

Recent hospital installations include the Mount Sinai, New York; Vanderbilt, Paris; St. Thomas's, London; Seacroft, Leeds; Rothschild, Paris; Children's, Zurich; Homeopathic Sanatorium, Davoust; International, Davoust; etc.

The System has also been recently adopted by the following New York hotels, etc.: St. Regis, Belmont, Knickerbocker, Plaza, Trinity Building, Bowling Green Building, Mercantile National Bank, American Woolen Company, Asbury Park High School, Lord & Taylor's, McCreery's, U. S. Express Building, etc., etc.

Offices and Factory:

120-122 West 31st St., New York

"The Kohler System"

will not be of the slightest interest to that architect or owner who is not thoroughly convinced that careful, accurate, honest electrical wiring of buildings is of the highest degree of importance. ¶ "The Kohler System" is the designation we have given to the *service* we perform, based upon the *experience* we have gained.

Kohler Brothers

Electrical Contracting Engineers

Fisher Bldg., Chicago
Metropolitan Life Bldg., New York
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SPRAGUE ELECTRIC COMPANY

Manufacturer of

Interior Conduits and Appliances



OUR Flexible Steel Conduit, Iron-Armored Conduit, Flexible Steel-Armored Conductors and Steel-Armored Flexible Cord meet the requirements of modern electric wiring, and for each type we make a full line of outlet and junction boxes, fittings, etc. Our products are used extensively for wiring by the U. S. government in various classes of work, and are in great demand for modern public and private buildings, cars, steamships, telephone connections, etc.

Our outlet box department is kept in close touch with the requirements of the trade. The most satisfactory results, of course, are obtained by using the conduit, boxes, fittings, etc., manufactured by one company.

WRITE FOR COPY OF BULLETIN No. 42139.

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527 WEST 34th STREET, NEW YORK

BRANCH OFFICES IN PRINCIPAL CITIES



Notice the S. & W. Sanitary Medicine Closet has every appearance of being a mirror and part of the room.



Notice the S. & W. Sanitary Medicine Closet open, showing the closet and storage capacity.

Sharpless & Watts Medicine Chests

THE body of S. & W. Co. Sanitary Medicine Chests is set in the wall. Cast Iron, Porcelain Enameled, the corners are all made to a radius, hence no crevices or seams, and easily cleaned.

The closet has all the advantages of being commodious and sanitary in every respect without disfiguring the lines of the room. You would never know that there is anything behind the mirror.

SHARPLESS & WATTS COMPANY
Philadelphia

MEASUREMENTS

Chest	Wall Space Inches	Depth Inches	Mirror Inches	Bevel Inches
No. 1	$29\frac{1}{8}$ x $24\frac{1}{4}$	$4\frac{1}{2}$	27 x 22	$1\frac{1}{4}$
No. 2	$24\frac{1}{4}$ x $29\frac{1}{8}$	$4\frac{1}{2}$	22 x 27	$1\frac{1}{4}$
No. 3	$34\frac{1}{8}$ x $29\frac{3}{4}$	$4\frac{1}{2}$	$31\frac{7}{8}$ x 28	$1\frac{1}{4}$
No. 4	$29\frac{3}{4}$ x $34\frac{1}{8}$	$4\frac{1}{2}$	28 x $31\frac{7}{8}$	$1\frac{1}{4}$
No. 5	21 x 25	$4\frac{1}{2}$	19 x 23	$1\frac{1}{4}$
No. 6	25 x 21	$4\frac{1}{2}$	23 x 19	$1\frac{1}{4}$



Residence of Mr. E. W. Warfield, Clayton, Mo.
Herbert C. Chivers, Architect, St. Louis.

Misfit Refrigerators

MANY beautiful homes have been marred with refrigerators and cold rooms which stuck out of the design of the kitchen instead of being part of it.

It is expensive to change, but don't cost much to have it done right when the house is being built.

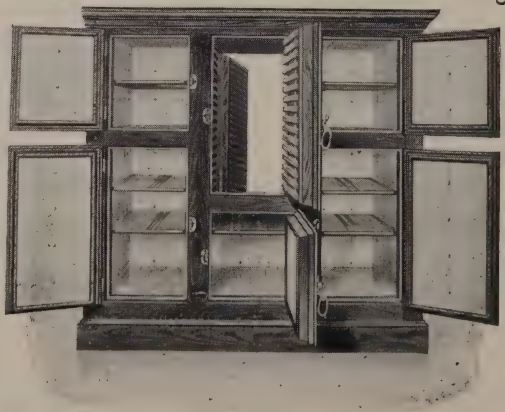
Have the refrigerator fit the house. Send us ground plans of any good house you have on the boards, and our special "made to order" draughting room will locate and plan the right refrigerator for you—and furnish safe open specifications free of cost to you or your clients.

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King Joy Lo Restaurant -	Chicago, Ill.	Rector's Restaurant - -	Chicago, Ill.
Sherman House, College Inn	Chicago, Ill.	King Edward Hotel, Cafe	Toronto, Canada
Pennobscot Cafe - - -	Detroit, Mich.	Great Northern Hotel, Cafe -	Chicago, Ill.
		Orr Brothers Cafe -	Toronto, Canada

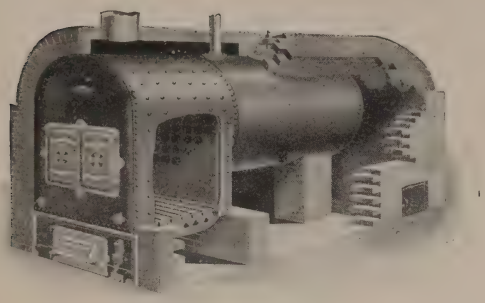
These and other dining rooms are good examples of what the Thomas Acme Air Washer will accomplish.

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There is a lot of difference in the appearance of the typical cast iron perpendicular boiler, put together in sections, and a

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There is just as much difference in the work done by the two kinds.

The KEWANEE Fire Box Boiler is built and made of the material it is because we are satisfied that no other form of construction will do so much real heating for so little money.

The reasons are fully explained on pages 722 to 725 Sweet's Index, 1907 edition, which is to be found in all architects' offices.

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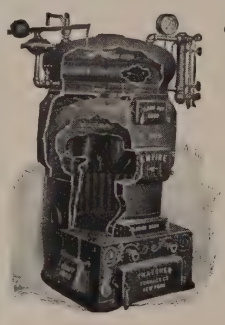
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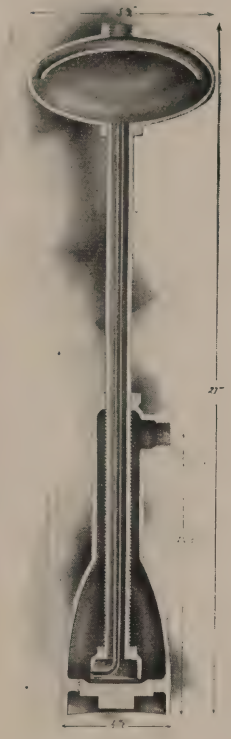
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Sectional View
Honeywell Heat
Generator

Who will use steam heat when **shown** that hot water costs less to install than makeshift steam?

Specify any boiler you prefer and any radiators you think best, and hot water will still cost less than steam to buy as well as to operate. And good as hot water heat has been in the past, it is better to-day than hot water ever has been before, as well as very much cheaper.

The Honeywell System of hot water heating is based on the discovery of how to cut down the sizes of pipes, valves and radiators and still increase the heating power of the boiler and the circulation of the water through the radiators.

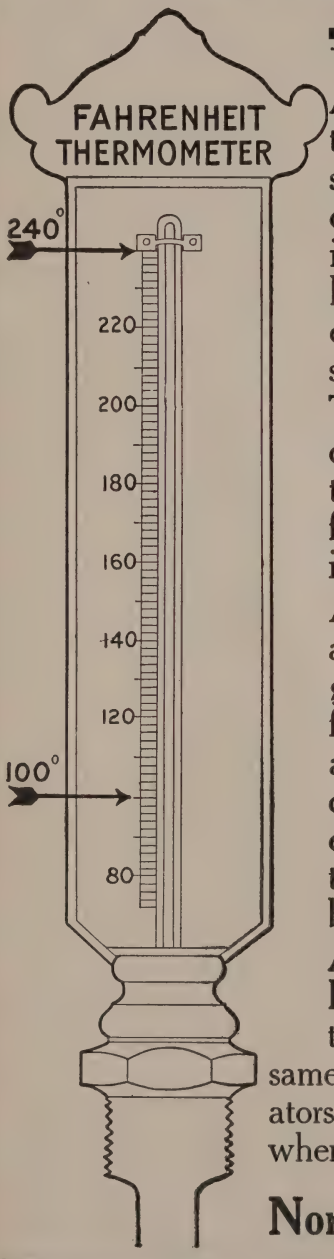
2500 Honeywell hot water heating systems are in successful operation

Many Honeywell heat generators have been used to cure poor circulation in old-fashioned big-pipe waterlogged hot water plants. It inexpensively cures hot water jobs which were unsuccessful because of insufficient radiation. Many homes were comfortable on cold days for the first time last winter.

There has been a revolution in hot water heating practice the past year, and if you are interested you will feel repaid for writing for detailed information and a list of installations in your locality.

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Wasting or Using a Banked Fire



Norwall Vacuum Heating temperature possibilities. From mildest hot water to hottest steam.

As soon as you "bank" the fire in a low pressure steam heating boiler, the water stops boiling and a few minutes later the radiators all over the building are stone cold.

There will be no steam delivered to the radiators again till the fire is forced the next morning.

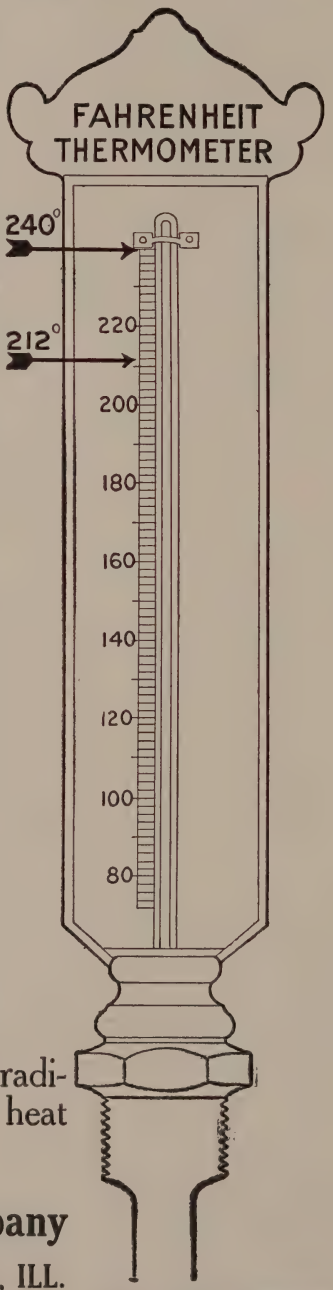
All of the coal burned and all of the heat generated by a slow fire or a banked fire are thrown away, because there is not quite enough heat to keep the water in the boiler boiling.

A Norwall Vacuum Heating System using the same boiler, the same piping and the same radiators does not lose its heat when the fire is banked.

Norwall Mfg. Company

154 LAKE STREET, CHICAGO, ILL.

104 West 42d Street, New York, N. Y.



Steam heating temperature possibilities. Boiling heat or no heat.

Wasting or Using a Banked Fire



Norwall Combined Vacuum and Air Valve.

The banked fire that cannot boil the water in the ordinary low pressure system keeps the same water boiling and sends useful heat (hot vapor) to the radiators as soon as the system is equipped with Norwall Vacuum Valves instead of the ordinary air valves.

Water boils and gives off steam at as low a temperature as 100 degrees when the plant is under vacuum automatically created by the Norwall System.

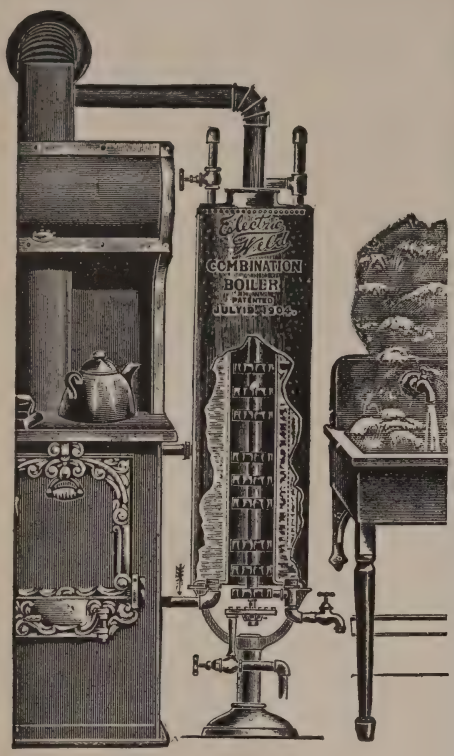
Think of the comparatively few days when the intense heat of low pressure steam is not too hot.

A Norwall System can give you all the intense heat of low pressure steam ***when you need it,*** but during the majority of the winter days and all of the spring and fall days, when the low temperatures of vacuum heating are all that are necessary for comfort, you are not at the mercy of the boiling heat or no heat of low pressure steam.

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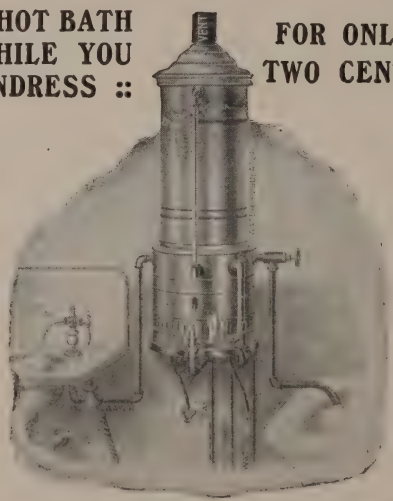
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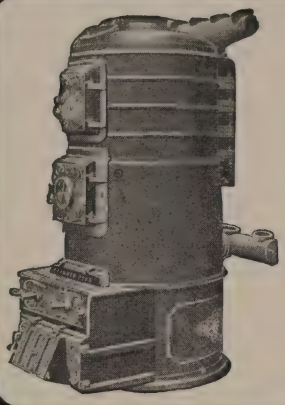


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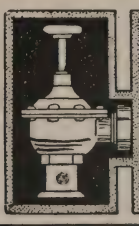
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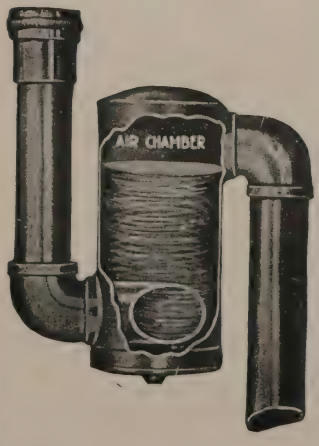
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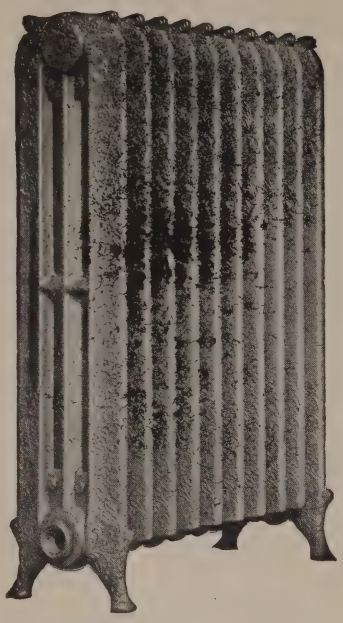


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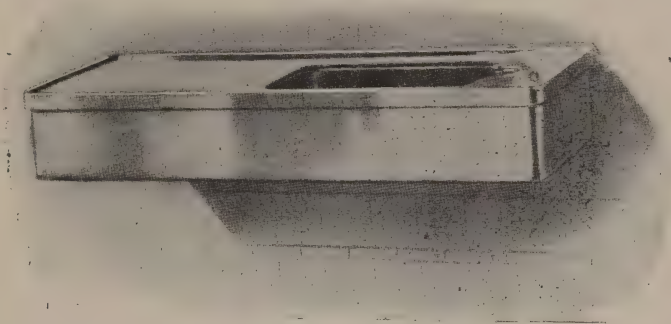
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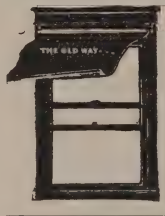
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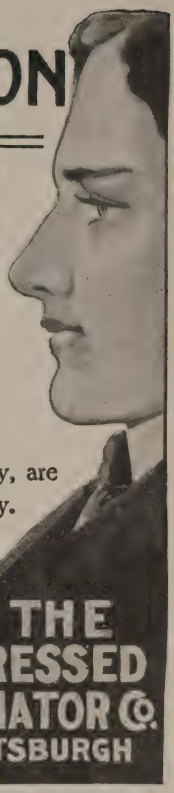
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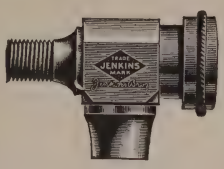
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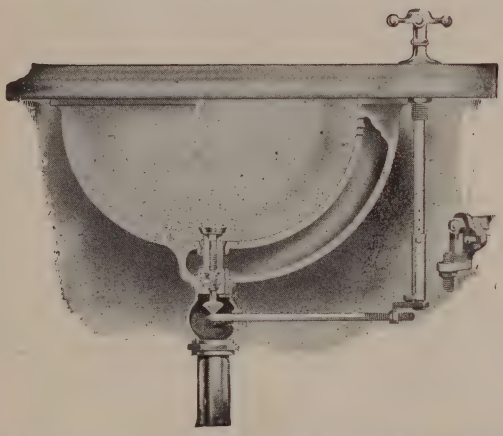
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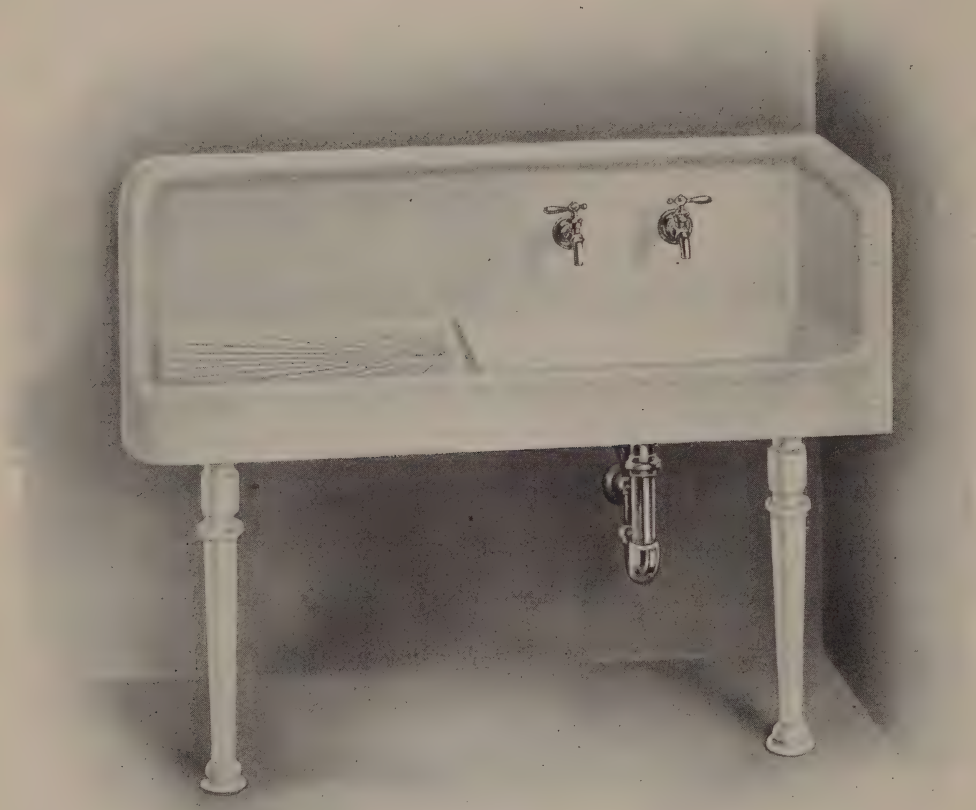
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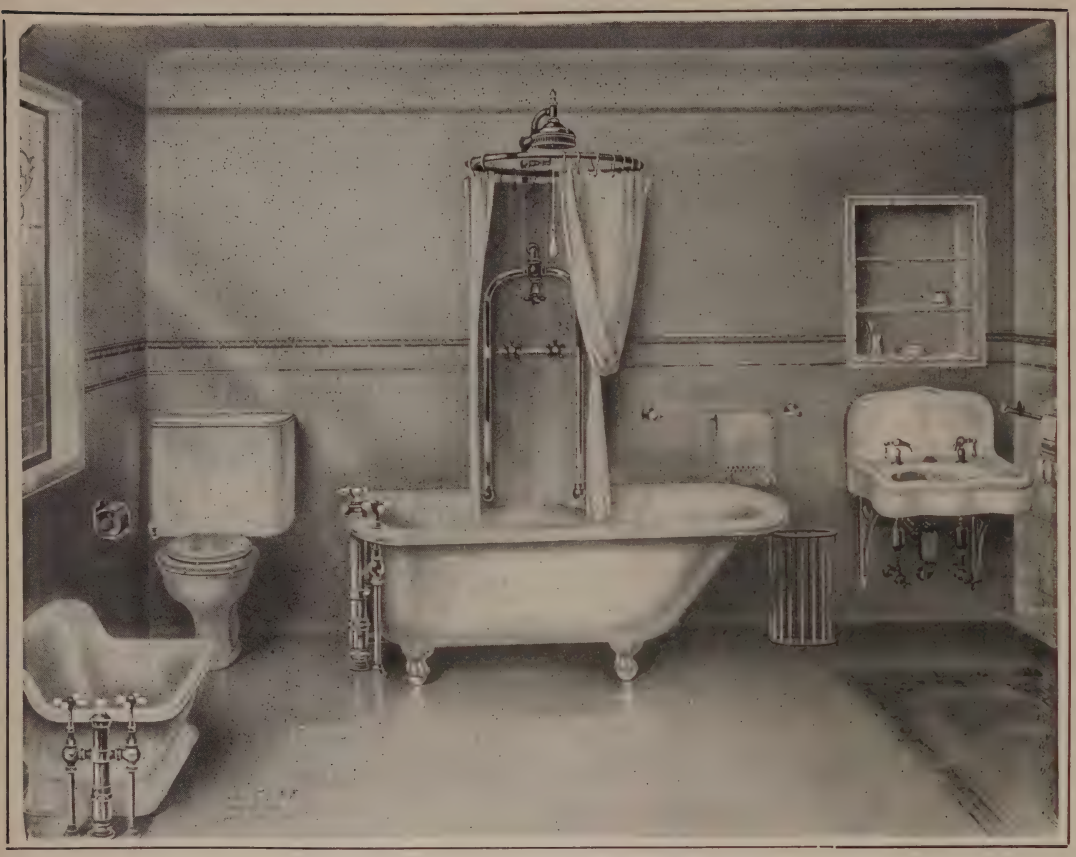
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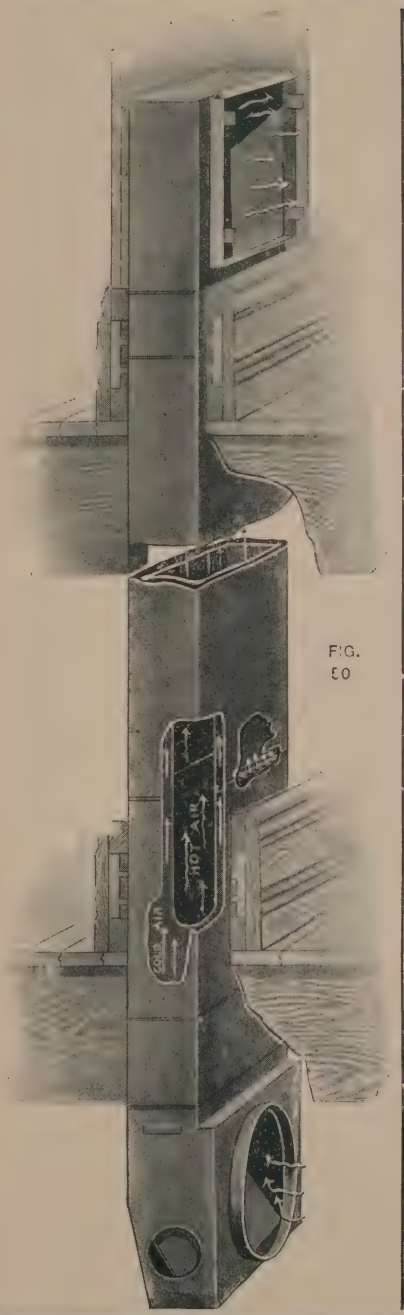


FIG. 50

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